TeleReach

User Manual

TR361
TR362
TR363
TR364

Raritan.

TeleReach

User Manual

TR361
TR362
TR363
TR364

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Raritan Computer Inc.
400 Cottontail Lane
Somerset, NJ 08873
USA
Tel. 1-732-764-8886
Fax. 1-732-764-8887
E-mail: sales@raritan.com
http://www.raritan.com

Raritan Computer Europe, B.V.
P.O. Box 566
2900 AN Capelle aan den IJssel
The Netherlands
Tel. 31-10-284-4040
Fax. 31-10-284-4049
E-mail: sales.europe@raritan.com
http://www.raritan.com

Raritan Computer Japan, Inc.
Kuga Building 7F
11-6, Kuramae 4-chome
Taitoo-ku, Tokyo 111-0051, Japan
Tel. 81-3-5833-6360
Fax. 81-3-5833-6336
E-mail: sales.japan@raritan.com
http://www.raritan.co.jp

Raritan Computer Taiwan, Inc.
5F, 121, Lane 235,
Pao-Chiao Rd., Hsin Tien
Taipei Hsien, Taiwan, ROC
Tel. 886-2-8919-1333
Fax. 886-2-8919-1338
E-mail: sales.asia@raritan.com
http://www.raritan.com.tw

FCC Information

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation. This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential environment may cause harmful interference.

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Important Information

TeleReach's default Log On user name is <admin> with the password <raritan>.
This user has administrative privileges.

Passwords are case sensitive and must be entered in the exact case combination in which they were created. The default password <raritan> must be entered entirely in lower case letters.

1. INTRODUCTION

TeleReach Overview

Convenient, secure, high-performance KVM access — TeleReach is the easiest, fastest, most reliable way to remotely access and manage multiple servers connected to a Raritan KVM Switch— no matter where you are or where your servers are located.

TeleReach connects to the keyboard, video, and mouse ports of up to four servers or KVM switches. Using Raritan's powerful frame-grabber and Video Compression Algorithm, it captures, digitizes, and compresses the video signal before transmitting to a remote PC. The remote user has direct access and total control of target servers for maintenance, administration, and trouble-shooting, from running GUI applications to BIOS-level troubleshooting, and even rebooting.

Use TeleReach for convenient access to servers anytime, from anywhere:

- Control servers from within the building or across campus
- Manage servers at branch offices from a central site
- Provide remote support for worldwide data centers
- Troubleshoot, reconfigure, and reboot servers from home
- Provide convenient, secure lights-out server management

Access via Internet, LAN/WAN, or dial-up modem — TeleReach provides a broad array of remote access methods to control any server connected to a Raritan KVM Switch. Since servers can also be accessed out-of-band with TeleReach, remote access to mission-critical target servers is always available—even if the network is down.

Features

- Up to 4 simultaneous paths to switch(es) or server(s)
- Up to 8 simultaneous users (using PC-share mode)
- Windows and Web browser access
- Superior compression algorithm for exceptional performance
- SSL 128-bit RSA public key, 128-bit RC4 private key encryption
- Simplified installation and user interface
- No impact on target server performance
- Servers accessible even if network is unavailable
- Automatically senses video resolution for optimum display
- High-performance mouse tracking and synchronization
- Remote KVM access via the Internet, LAN/WAN, or dial-up modem
- Connect a user console for direct, analog access to KVM switch
- Supports RADIUS authentication protocol
- Extensive user event log
- DHCP or fixed IP addressing
- Keyboard macro mapping
- Remote Administration

TeleReach System Components

TeleReach is a fully configured stand-alone product in a standard 2U 19” rack mount chassis (Figure 1).

Figure 1. TeleReach

Each TeleReach ships with

(1) TeleReach unit
(1) TeleReach Quick Installation and Setup Guide
(1) TeleReach User Manual
(1) TeleReach Control (TRC) software CD-ROM for Remote PC
(1) TeleReach Software License Certificate
(1) Rack mount kit
(1) Power cord
(1) RJ11 telephone cord
(x) CCP20 coaxial cables, where x=number of KVM ports
(x) CCP20F coaxial cables, where x=number of KVM ports

Keyboard, and monitor for TeleReach Admin Console; and keyboard, monitor, and mouse for User Console(s) for direct analog access to KVM switch not included. TeleReach supports user consoles consisting of PS/2 style keyboard, PS/2 style mouse, and HD15 video. See Appendix F: Specifications for more details.

2. INSTALLATION

Steps 1 through 5 below are required for physical installation of TeleReach, and are outlined in this section.

1. Connect TeleReach to user port(s) of base Raritan KVM Switch in pre-established KVM configuration
2. Connect TeleReach Admin Console
3. Install User Console(s) for direct analog access to KVM switch
4. Connect power cord to back of TeleReach and AC power source
5. Connect TeleReach to network and/or analog telephone line
6. Proceed to 3. Setup and follow the steps for *TeleReach Power Up & Network or Dial-up Installation* and *Fine-Tune KVM Configuration From Direct Analog User Console.*

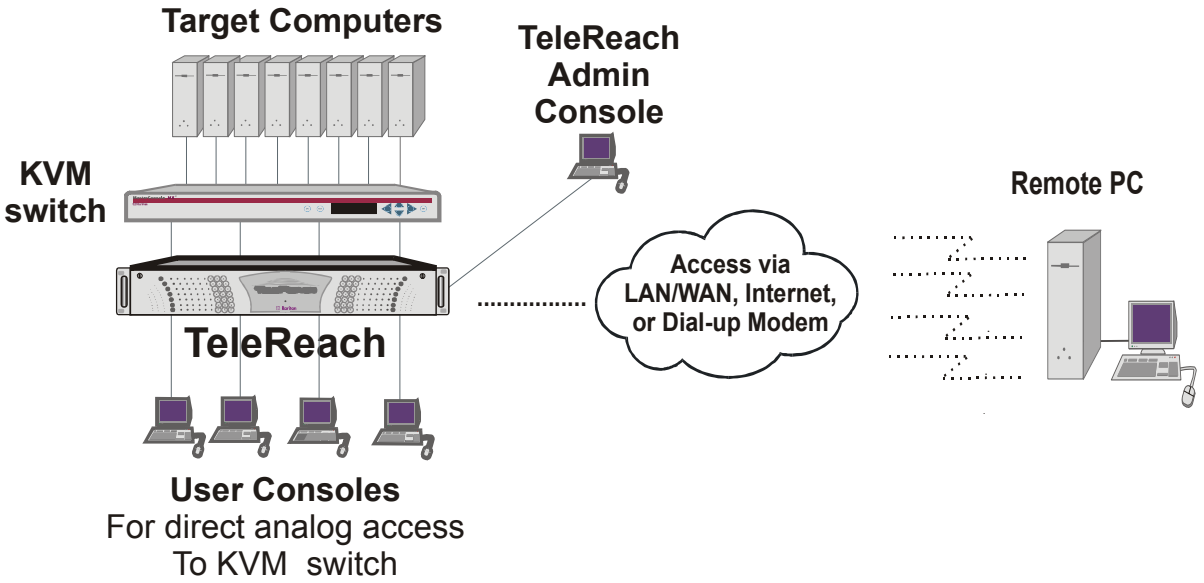


Figure 2. TeleReach Configuration

TeleReach Admin Console	Keyboard/monitor for TeleReach administration and setup. From this console only TeleReach admin screens can be accessed – Target Servers of the connected KVM configuration cannot be viewed. Required for initial setup of TeleReach.
Target Server(s)	The servers accessed remotely through TeleReach and its connected KVM configuration.
User Console for direct analog access to KVM switch	User Console (keyboard/monitor/mouse) connected through TeleReach for direct analog KVM switch local access to Target Servers.
Remote PC	A remote Windows-based computer that uses TeleReach Control (TRC) software or Microsoft Internet Explorer to view Target Servers remotely through TeleReach.

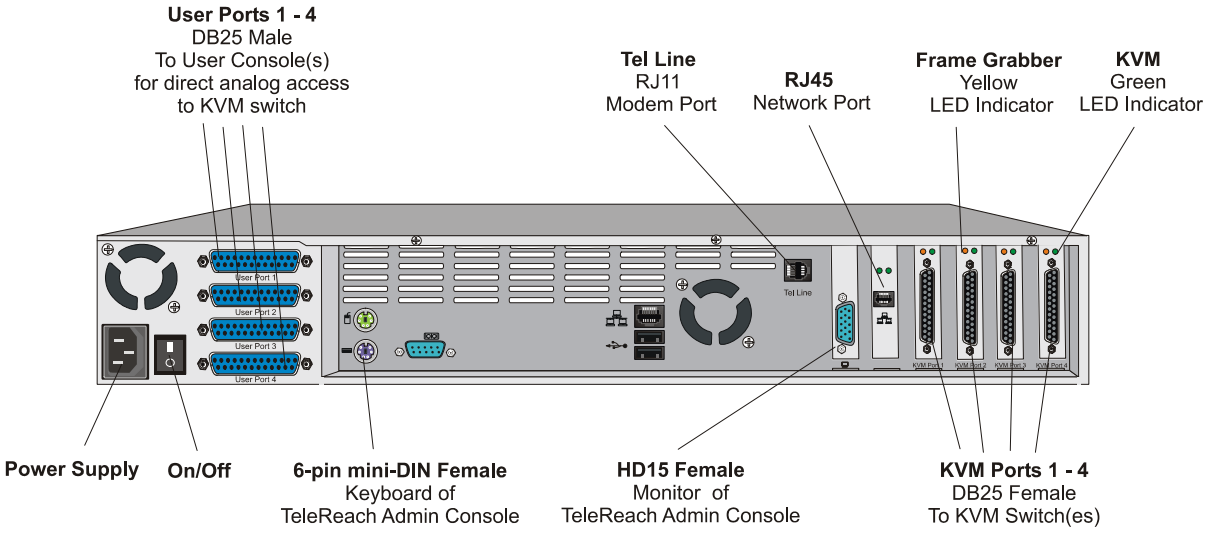


Figure 3. Back of TeleReach

1. Connect TeleReach to user port(s) of base Raritan KVM Switch(es) in pre-established KVM configuration.

NOTE: KVM switch and Target Servers can remain powered ON when connecting TeleReach.

For a Paragon (Figure 4):

a) Connect DB25 Male end of provided CCP20 cable to a DB25 Female KVM Port 1 on back of TeleReach (Figure 3).

b) Connect keyboard, mouse and video legs of provided CCP20 cable to keyboard, mouse and video user ports on a UST1 (Paragon User Station).

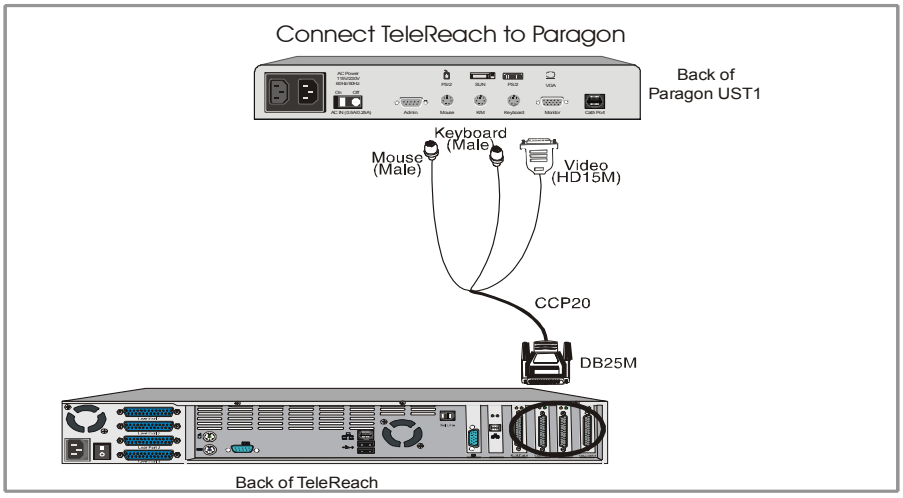


Figure 4. Connecting TeleReach to a Paragon

NOTE: For TR362, TR363, or TR364 models with multiple KVM ports, repeat the above steps, connecting remaining KVM Ports to UST1s. UST1s can all be connected to the same UMT8 in one Paragon KVM configuration; or UST1s can be connected to different UMT8s representing multiple Paragon KVM configurations——See Figures 55a to 55e.

For a MasterConsole MX^4 (Figure 5):

a) Disconnect the user console (keyboard, monitor, mouse) from the CCPnnF cable coming from a user port on the back of the MX^4 in the pre-established MX^4 configuration.

b) Reconnect the CCPnnF cable's 6-pin mini-DIN female keyboard and mouse connectors, and HD15 female video connector to the appropriate 6-pin mini-DIN male keyboard and mouse connectors, and the HD15 male video connector at the end of the provided CCP20 cable.

c) Connect DB25 Male end of provided CCP20 cable to DB25 Female KVM Port 1 on back of TeleReach (Figure 5).

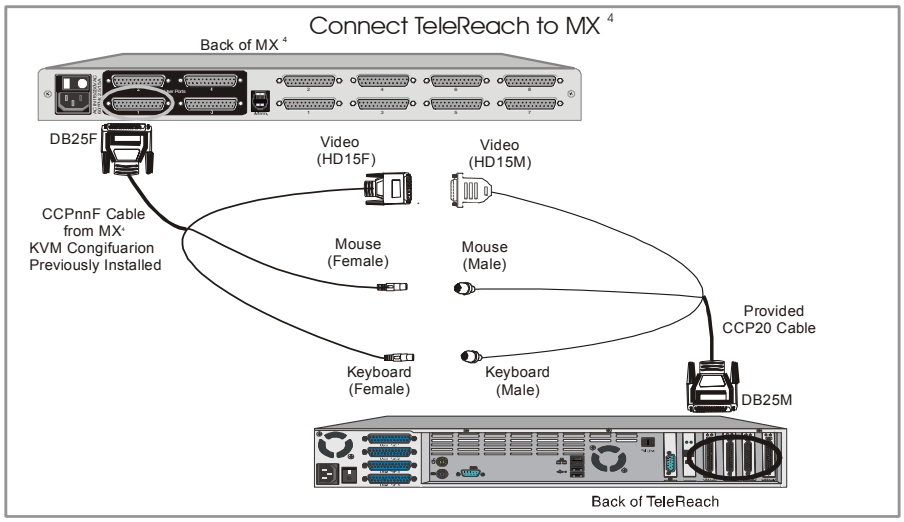


Figure 5. Connecting TeleReach to a MasterConsole MX^4

NOTE: For TR362. TR363, or TR364 models with multiple KVM ports, repeat the above steps, connecting remaining KVM Ports to one or multiple MX^{4}s——See Figures 55a to 55e.

NOTE: MX^4 installation can also be accomplished via CCPnnE cable(s), which are available as a separate purchase from Raritan.

a) Connect DB25 Male end of purchased CCPnnE cable to DB25 Female KVM Port 1 on back of TeleReach (Figure 6).

b) Connect DB25 Female end of purchased CCPnnE cable to a DB25 Male user port on MX^4.

For TR362. TR363, or TR364 models with multiple KVM ports, repeat these steps, connecting remaining KVM Ports to one or multiple MX^{4}s——See Figures 55a to 55e.

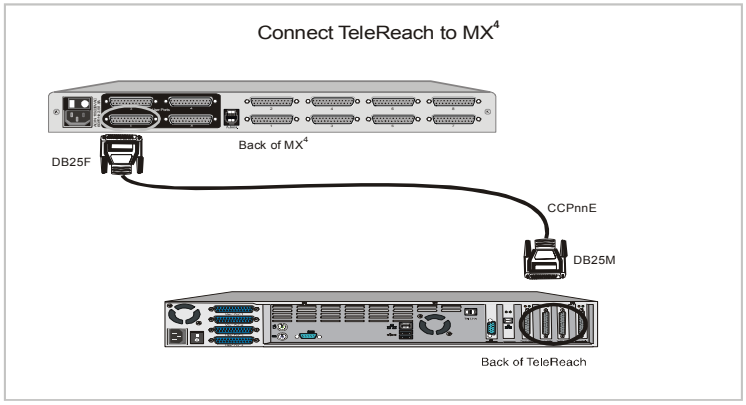


Figure 6. Connecting TeleReach to a MasterConsole MX^4 Using Purchased CCPnnE cable

For a MasterConsole II or MasterConsole MXU2 (Figure 7):

a) Connect DB25 Male end of provided CCP20 cable to DB25 Female KVM Port 1 on back of TeleReach (Figure 3).

b) Connect keyboard, mouse and video legs of provided CCP20 cable to keyboard, mouse and video user ports on MasterConsole II.

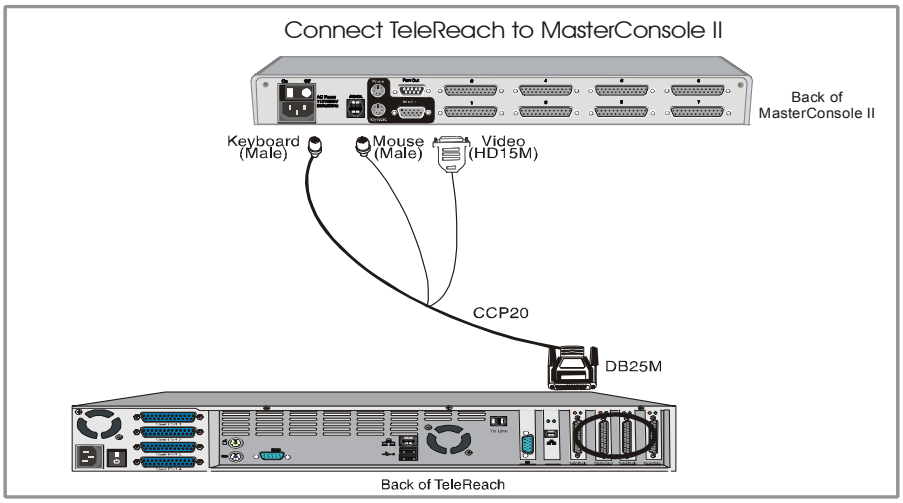


Figure 7. Connecting TeleReach to a MasterConsole II or MasterConsole MXU2

NOTE: For TR362, TR363, or TR364 models with multiple KVM ports, repeat the above steps, connecting remaining KVM Ports to multiple MasterConsole IIs ——See Figure 55e

2. Connect TeleReach Admin Console (Figure 8).

a) Connect a keyboard and monitor (admin console) to appropriate 6-pin mini-DIN Female keyboard port, and HD15 Female port on back of TeleReach (Figure 3).
b) Plug in monitor power cord.

Keyboard and monitor for TeleReach Admin Console not included – See **Appendix F: Specifications** for hardware compatibility.

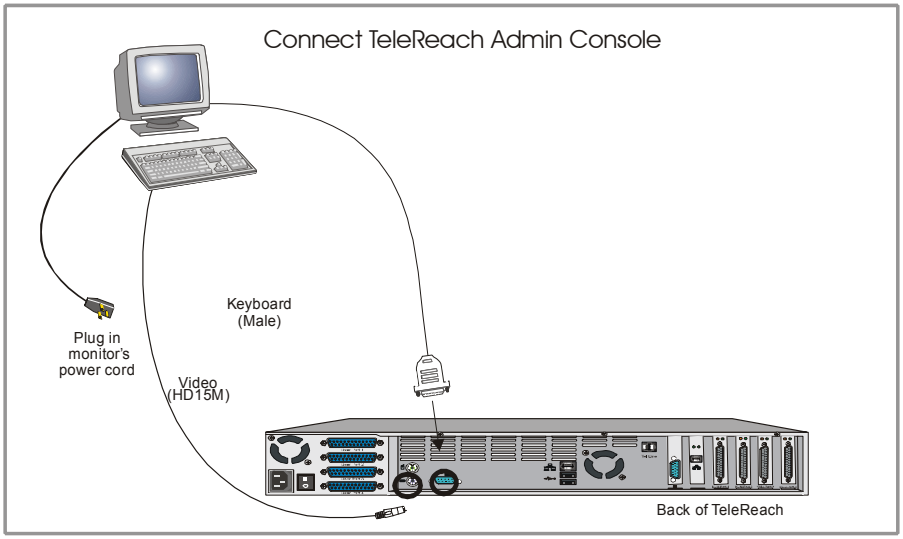


Figure 8. Connecting TeleReach Admin Console

3. Install User Console(s) for direct analog access to KVM switch.

TeleReach's DB25 Male User Port(s) connect to User Console(s) for direct analog access to the KVM switch while working locally. These "pass-through" port(s) access the KVM switch like any other connected user console. Installation of Direct Analog User Consoles is vital to the setup of TeleReach to perform KVM configuration fine-tuning, and to verify proper KVM connectivity to TeleReach. Direct Analog User Consoles also provide local access to Target Servers, since Target Servers cannot be viewed through the TeleReach Admin Console. All User Consoles remain in a ready state and can be utilized at any time.

NOTE: TeleReach must be powered ON for Direct Analog User Consoles to function.

Control of the Target Server through either the Remote PC or a Direct Analog User Console will be based on a shared, first active keyboard/mouse input basis.

Steps to connect Direct Analog User Console(s) (Figure 9).

a) Connect DB25 Female end of provided CCP20F cable to DB25 Male User Port 1 on back of TeleReach (Figure 3).
b) Connect legs from other end of CCP20F cable to keyboard, monitor, and mouse (user console).
c) Plug in monitor power cord.

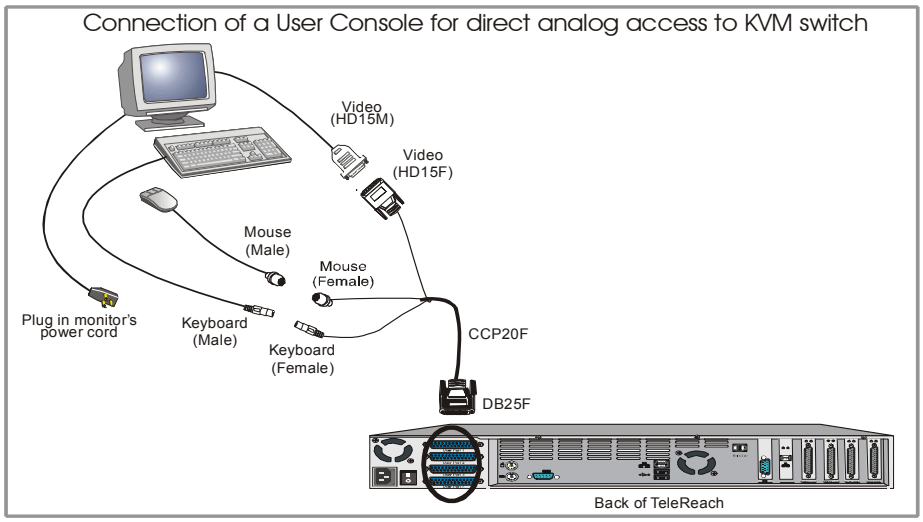


Figure 9. Connecting a User Console for direct analog access to KVM switch

Keyboard, monitor, and mouse for User Console for direct analog access to KVM switch not included - see **Appendix F: Specifications** for hardware compatibility.

NOTE: For TR362, TR363, or TR364 models with multiple KVM ports, repeat the above steps, connecting remaining User Ports to one User Console each.

NOTE: User Consoles can be attached to User Ports 1 through 4. Each User Console will view the path of the matching KVM Port. For example, the User Console attached to User Port 1 will view the KVM switch or server attached to KVM Port 1. Similarly, the User Console attached to User Port 2 will view the KVM switch or server attached to KVM Port 2, and so on.

4. Connect power cord to back of TeleReach and AC power source.

NOTE: TeleReach can be set for either 115V or 230V power at the two power supply modules on the inside front cover of the unit. Unscrew the two screws on TeleReach's front panel, and ensure that these power settings are positioned correctly at the desired voltage. Also, ensure that the power switches for both power modules are turned on.

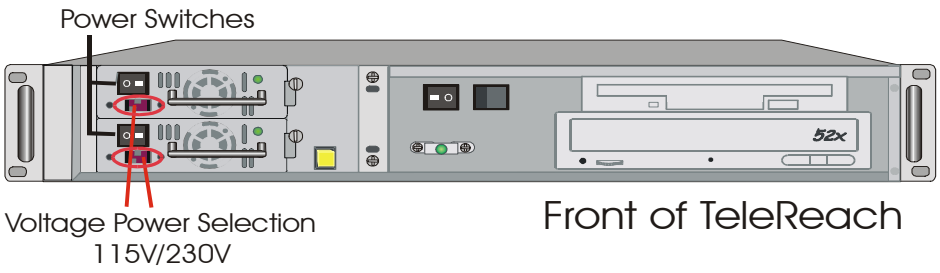


Figure 10. TeleReach Power Settings

5. **Connect Ethernet Network to RJ45 Network Port and/or connect analog telephone line to RJ11 Modem Tel Line Port on the back of TeleReach (Figure 3).**

NOTE: TeleReach has two RJ45 ports. When connecting TeleReach to an Ethernet Network be sure to use the RJ45 port located just to the left of the KVM ports (Figure 11).

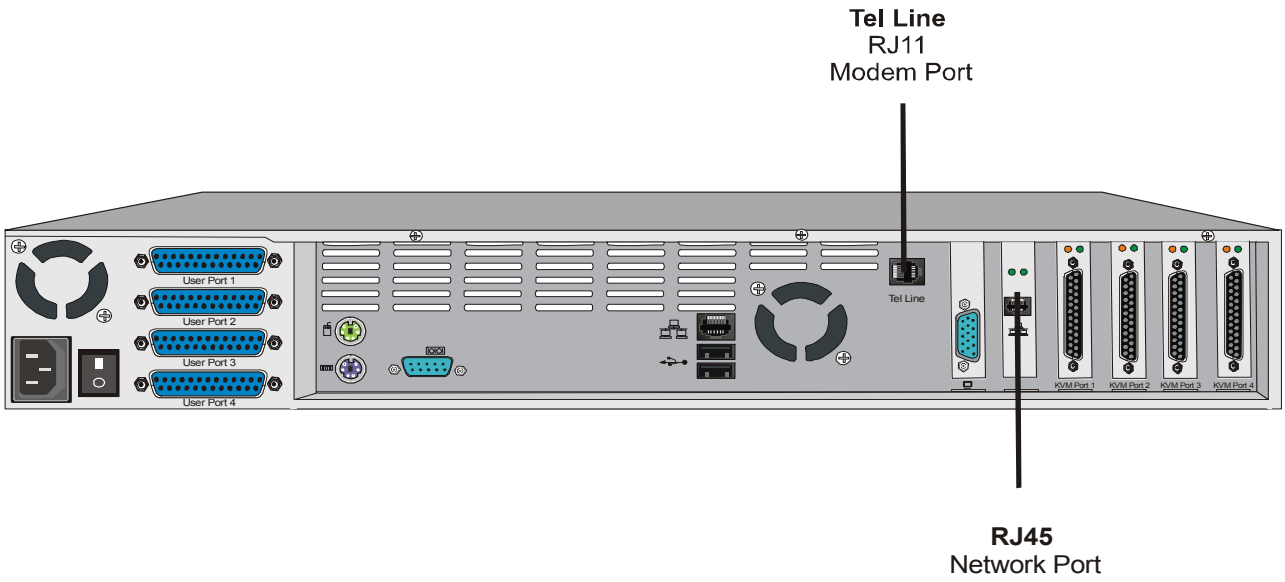


Figure 11. Network and Telephone Line Connections to TeleReach

NOTE: Network connections must be 10BASE-T, or 100BASE-TX Ethernet

NOTE: TeleReach requires support of TCP/IP (Transmission Control Protocol/Internet Protocol) and UDP (User Datagram Protocol), both locally and at the Remote PC.

6. Proceed to part **3. Setup** and follow the steps for ***TeleReach Power Up & Network or Dial-up Installation*** and ***Fine-Tune KVM Configuration From Direct Analog User Console***.

3. SETUP

Initializing TeleReach Parameters

The steps below allow you to quickly setup TeleReach, utilizing the **TeleReach Setup Wizard** (Figure 12). For full Administrative Setup options, see **8. Local Administrative Functions**.

1. Power ON TeleReach via power switch on back of TeleReach unit.
2. The **Welcome to TeleReach Setup Wizard Screen** (Figure 12) will appear on the TeleReach Admin Console.

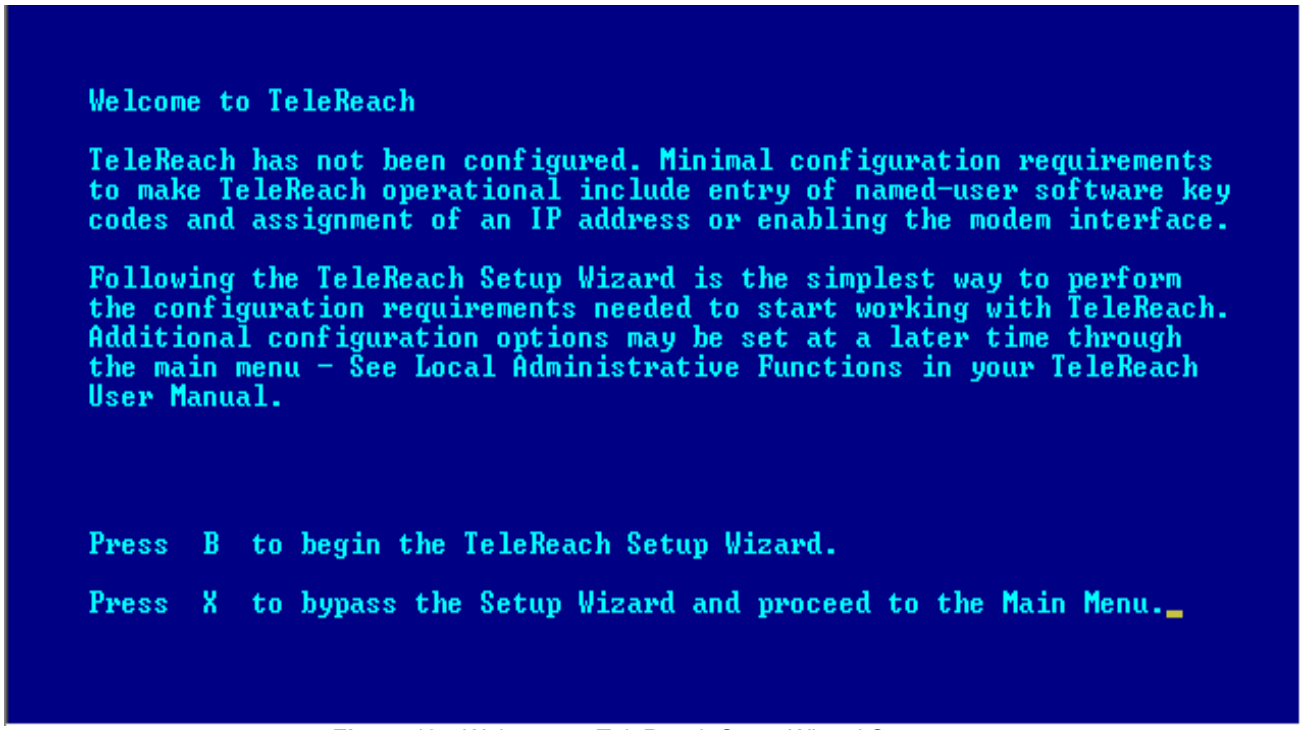

Welcome to TeleReach
TeleReach has not been configured. Minimal configuration requirements to make TeleReach operational include entry of named-user software key codes and assignment of an IP address or enabling the modem interface.
Following the TeleReach Setup Wizard is the simplest way to perform the configuration requirements needed to start working with TeleReach. Additional configuration options may be set at a later time through the main menu - See Local Administrative Functions in your TeleReach User Manual.
Press B to begin the TeleReach Setup Wizard.
Press X to bypass the Setup Wizard and proceed to the Main Menu.

Figure 12. Welcome to TeleReach Setup Wizard Screen

3. Press <B> to begin the TeleReach Setup Wizard.

4. The **Key Configuration screen** (Figure 13) will appear:

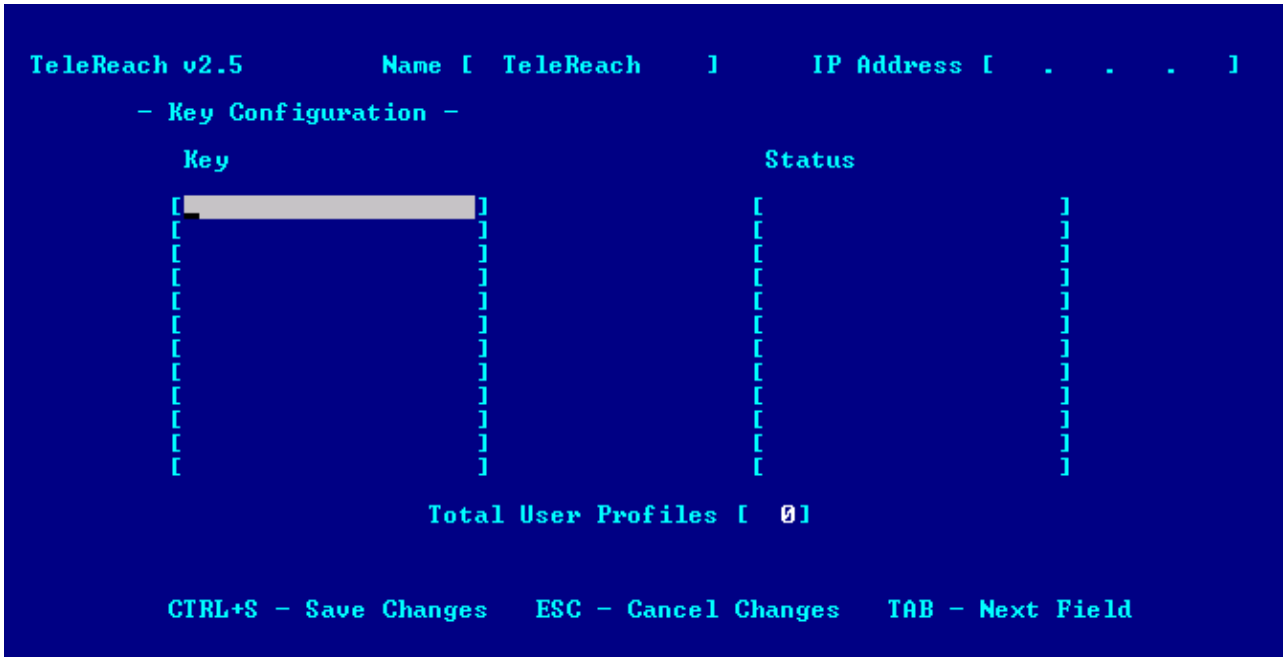

TeleReach v2.5 Name [TeleReach] IP Address [. . .]
- Key Configuration -
Key
Status
Total User Profiles [0]
CTRL+S - Save Changes
ESC - Cancel Changes
TAB - Next Field

Figure 13. Key Configuration Screen

5. Enter each TeleReach Control User License Key purchased, pressing <Tab> or <Enter> after each key is entered. TeleReach Control User License Key codes can be found on the license certificates shipped with your unit.
6. When all named-user keys are entered, press <Ctrl+S> to save the keys entered.
7. All entered key codes will be saved and the Network Configuration screen (Figure 14) will appear.

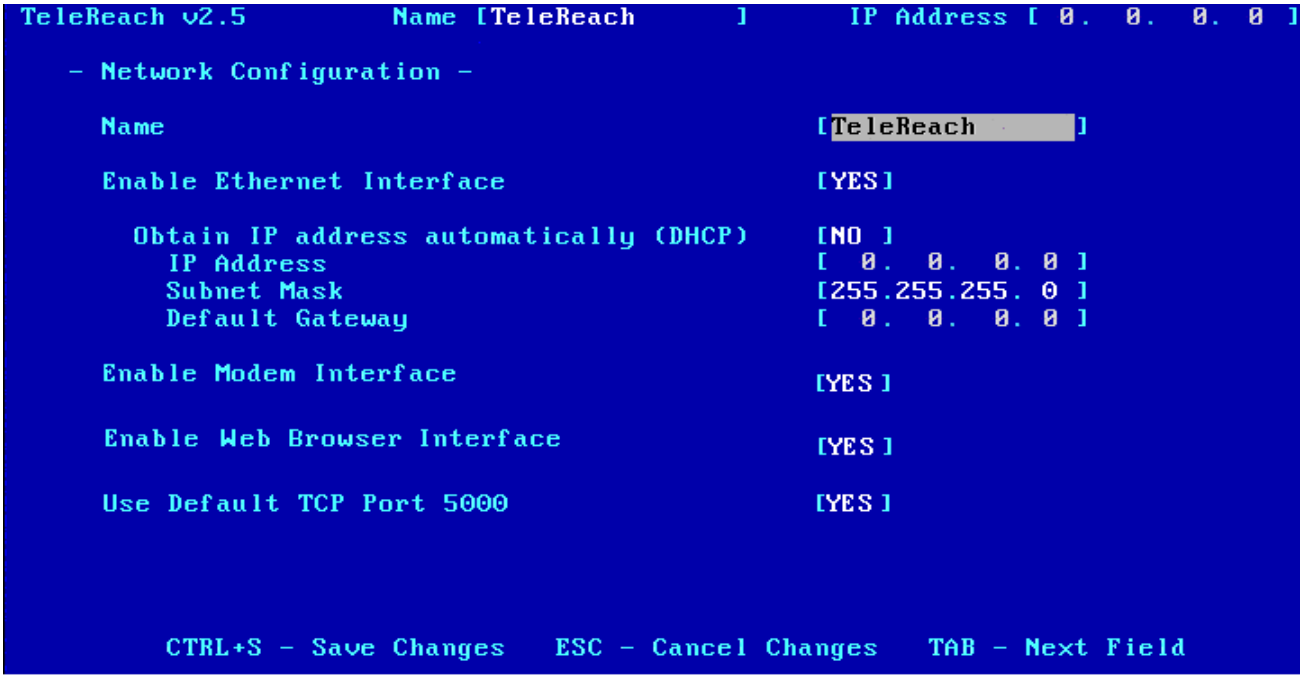

TeleReach v2.5 Name [TeleReach] IP Address [0. 0. 0. 0]
- Network Configuration -
Name [TeleReach]
Enable Ethernet Interface [YES]
Obtain IP address automatically (DHCP) [NO]
IP Address [0. 0. 0. 0]
Subnet Mask [255.255.255. 0]
Default Gateway [0. 0. 0. 0]
Enable Modem Interface [YES]
Enable Web Browser Interface [YES]
Use Default TCP Port 5000 [YES]
CTRL+S - Save Changes
ESC - Cancel Changes
TAB - Next Field

Figure 14. Network Configuration Screen

8. Consult your Network Administrator for details on network IP settings and settings for an analog telephone line.

   Use the keys <Tab>, <↑> or <↓> to select each line on the Network Configuration screen and the <space bar>, or the <←> or <→> keys to toggle between available entries. Press <Enter>, <Tab> or <↓> when your entry on each line is complete.

   a. Name: Type the name you wish to designate to this TeleReach unit. The default name is <TeleReach>.

   b. Enable Ethernet Interface: For LAN/WAN or Internet access select [YES] (default is YES).

   NOTE: Network connections must be 10BASE-T, or 100BASE-TX Ethernet

   c. Obtain IP address automatically (DHCP):

   - **YES:** Enables dynamic IP addressing for TeleReach. Each time TeleReach boots up it will request an IP address from the local DHCP server. This makes remote access to TeleReach by a method other than LAN difficult, since the dynamically assigned IP address must be known.
   - **NO (default)**: Assigns a fixed IP address to the TeleReach unit. (Recommended) Use the <→> or <←> keys or type a period to move between fields within an IP address entry.

   d. IP Address: Enter the IP address for TeleReach given by your Network Administrator.

   e. Subnet Mask: Enter a Subnet Mask number provided by your Network Administrator.

   f. Default Gateway: Enter a Default Gateway number if your Network Administrator specifies one.

   g. Enable Modem Interface: For Dial-up Modem access select [YES]. (default is YES).

   h. Enable Web Browser Interface: For Web Browser access select [YES]. (default is YES).

   i. Use Default TCP Port 5000:

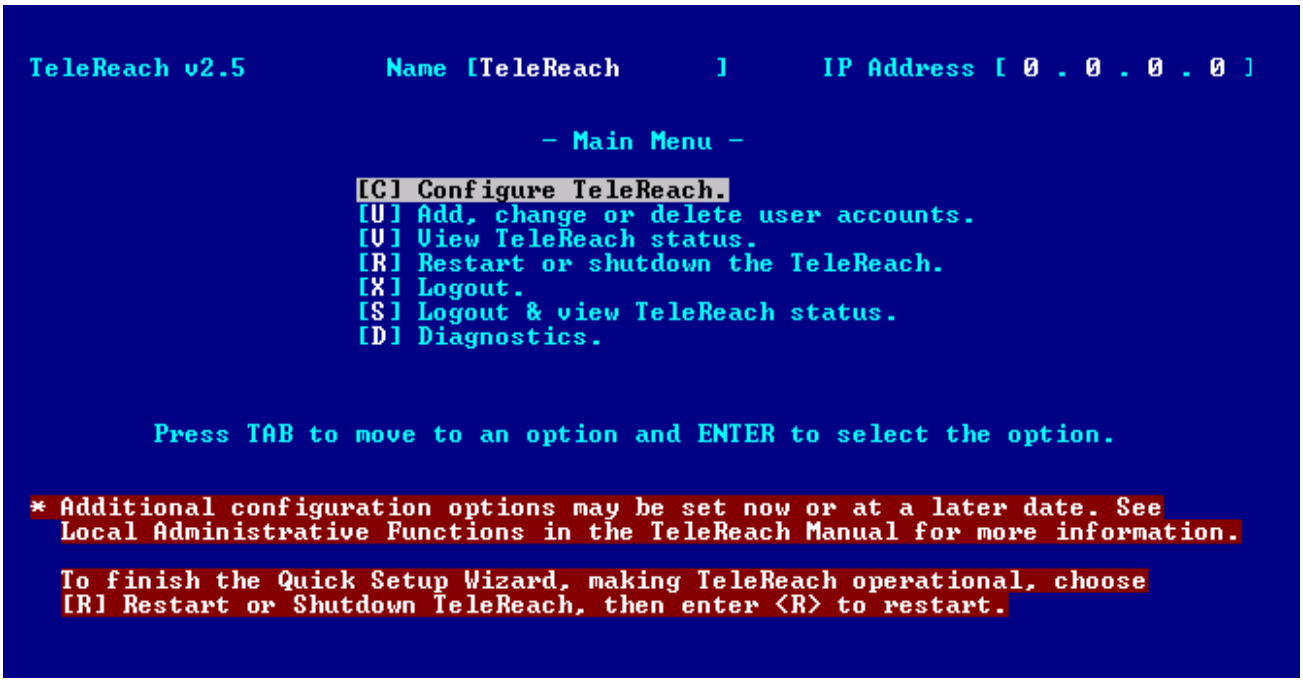
   - **YES (default):** Utilizes the default port 5000.
   - **NO:** Enter an alternate port number.

   NOTE: Firewall security must enable two-way communication through default port 5000, or selected non-default port. If a non-default port is utilized, the selected port number set here must also be designated to match at the Remote PC for both a TCP/IP Connection (Figure 23a) and a Dial Up Connection (Figure 23b) - See Configure A Connection in 4. Prepare A Remote Connection.

   NOTE: TR361, TR362, & TR364 models use only one TCP port — default port 5000. Prior TeleReach models (TR360-V2) require 3 open ports — default ports 5000, 5001, & 5002 as indicated.

9. Press <CtrlL+S> to save entries.
10. The Main Menu (Figure 15) will appear.

Figure 15. Main Menu — Ending the TeleReach Quick Setup Wizard


TeleReach v2.5
Name [TeleReach]
IP Address [0 . 0 . 0 . 0]
- Main Menu -
[C] Configure TeleReach.
[U] Add, change or delete user accounts.
[V] View TeleReach status.
[R] Restart or shutdown the TeleReach.
[X] Logout.
[S] Logout & view TeleReach status.
[D] Diagnostics.
Press TAB to move to an option and ENTER to select the option.
* Additional configuration options may be set now or at a later date. See Local Administrative Functions in the TeleReach Manual for more information.
To finish the Quick Setup Wizard, making TeleReach operational, choose [R] Restart or Shutdown TeleReach, then enter <R> to restart.

11. On the Main Menu (Figure 15) select [R] Restart or shutdown the TeleReach. Press <Enter>.
12. Press <R> to restart TeleReach.
13. TeleReach will restart and the TeleReach Initialization screen will appear (Figure 16).

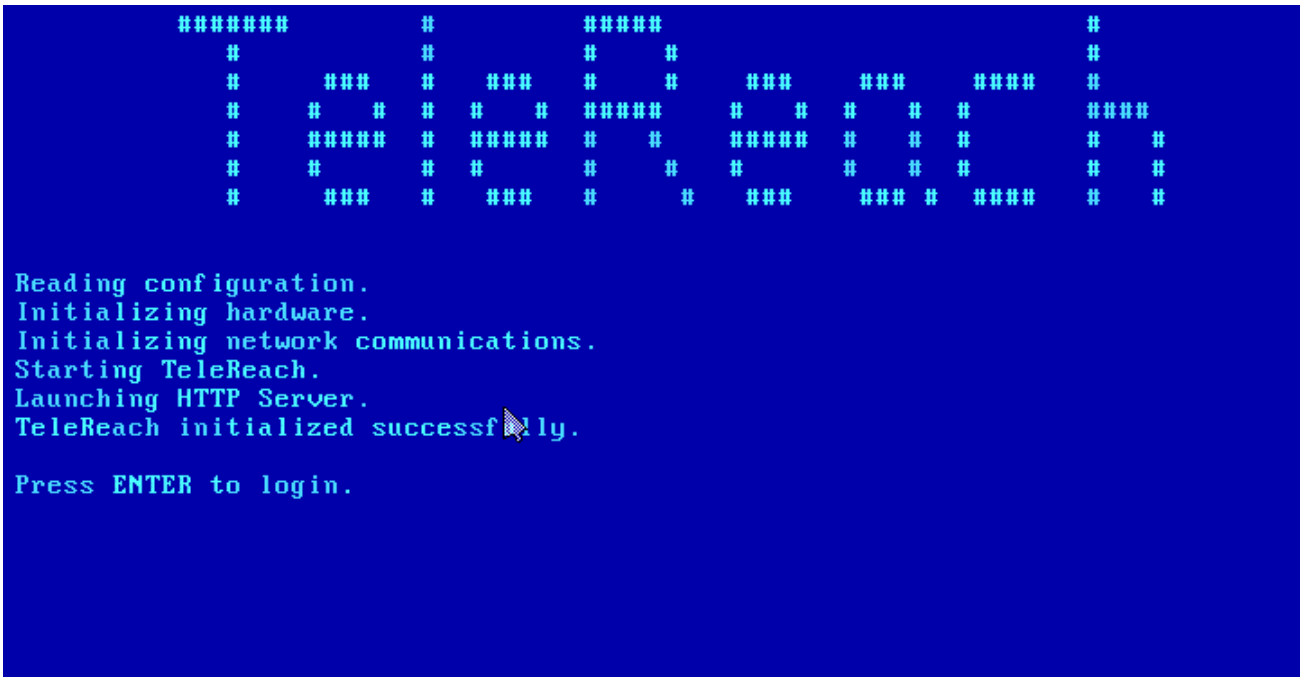


Figure 16. TeleReach Initialization Screen

14. Press <Enter>.
15. The Log On screen will appear (Figure 17).

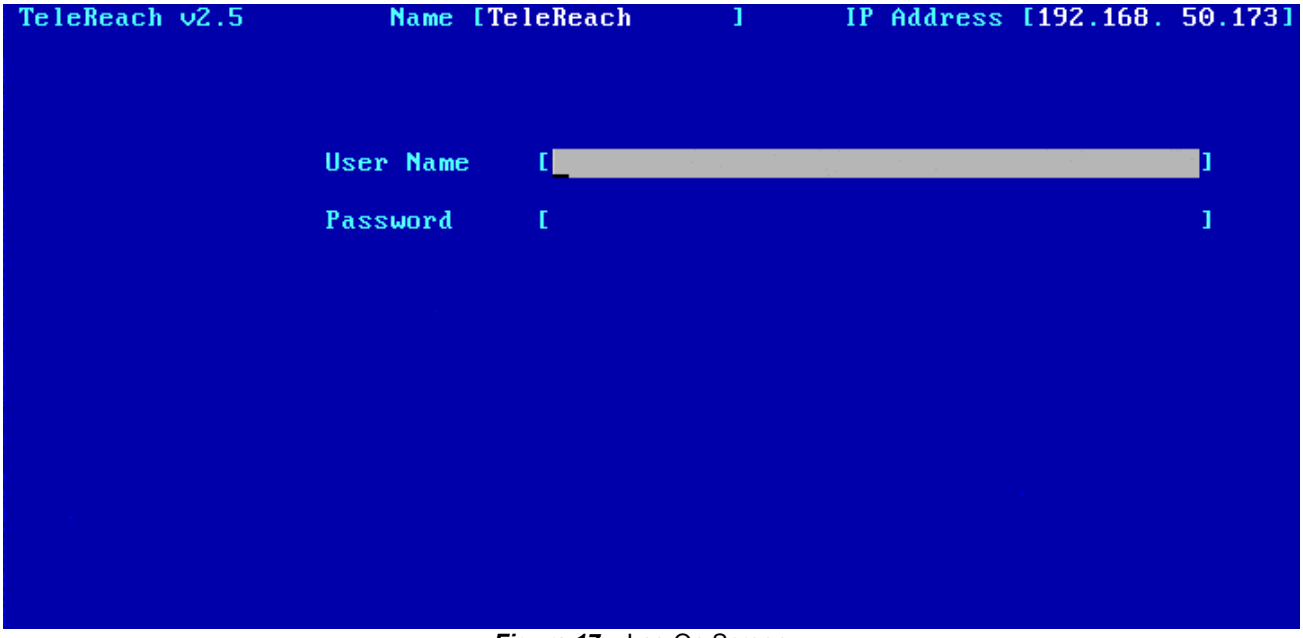


Figure 17. Log On Screen

16. Enter a User Name and Password, pressing the <Enter> key after each entry.

NOTE: Only administrators (users with administrative privileges) can log on at the TeleReach Admin Console.

TeleReach's default Log On user name is <admin> with the password <raritan>. This user has administrative privileges. Passwords are case sensitive and must be entered in the exact case combination in which they were created. The default password <raritan> must be entered entirely in lower case letters.

17. See **8. Administrative Functions** for more on setting up users and performing other administrative functions from the TeleReach Admin Console.

KVM Configuration Fine-Tuning

From each Direct Analog User Console attached to TeleReach, optimal TeleReach performance requires fine-tuning of:

- the KVM switch and
- the attached Target Servers

NOTE: Direct Analog User Consoles can be attached to User Ports 1 through 4. Each Direct Analog User Console will view the KVM switch or server attached to the corresponding KVM Port. For example, the User Console attached to User Port 1 will view the KVM switch or server attached to KVM Port 1. Similarly, the User Console attached to User Port 2 will view the KVM switch or server attached to KVM Port 2, and so on.

Fine-Tune KVM Switch

1. Paragon:

a. One by one, from the Direct Analog User Console, view each Target Server accessible from the UST1 connected to TeleReach and adjust the gain setting to negative 15. Paragon video gain can be adjusted by pressing the + or – key while accessing any On-Screen User Interface menu. The bottom of the OSUI menu will show the gain setting as the + or – keys are pressed. Gain settings around negative 15 generally result in the clearest image when each Target Server is viewed through TeleReach from a Remote PC.

b. Adjust the help menu at the bottom of the KVM On-Screen Display menu so that it is static and does not scroll. Bring up the User Profile On-Screen Menu (press <F4> while viewing any OSUI menu) and set the Help Mode at the bottom of the User Profile menu to Single Line.

2. MasterConsole MX^4:

a. Adjust the help menu at the bottom of the KVM On-Screen Display menu so that it is static and does not scroll. Bring up the User Profile On-Screen Menu (press <F4> while viewing any OSUI menu) and set the Help Mode at the bottom of the User Profile menu to Single Line.

Fine-Tune Connected Target Servers

Target PCs

1. Ensure that all Target PCs have standard PS/2 Windows-based mouse drivers.
2. Set each Target PCs' mouse pointer motion and acceleration speed as follows:

    a. For Windows 2000 — based Target PCs, set the mouse motion speed on each Target PC to the middle speed setting between Slow and Fast, and set the mouse motion acceleration speed on each Target PC to <None>.

    b. For Windows '95, '98, or NT – based Target PCs, set the mouse motion speed on each Target PC to the slowest setting possible.

    c. For Windows XP —based Target PCs, disable the "Enhanced Pointer Precision" feature and set the pointer speed to the middle setting on each Target PC. Start > Control Panel > Printers and Other Hardware > Mouse > the Mouse Pointers window will appear. Select the Pointer Options tab. In the "Motion" section deselect the "Enhance pointer precision" check box, and ensure that the pointer speed is set to the middle speed setting between Slow and Fast.

NOTE: For Target PCs running Windows NT, 2000, or XP you may wish to set up a separate desktop under a user name that is to be used only for remote connections through TeleReach. Mouse pointer motion/acceleration settings in these Operating Systems are unique to the user desktop where they are set. This will enable you to keep the Target PCs' slow mouse pointer motion/acceleration settings exclusive to the TeleReach connection, since other users may desire faster mouse speeds.

NOTE: Windows NT Administration or Log On screens may revert to pre-set mouse pointer motion/acceleration speeds that differ from those suggested for optimal TeleReach performance. As a result, mouse sync may not be optimal at these screens. If you're comfortable adjusting the registry on the Windows NT Target PC, you can obtain better TeleReach mouse synchronization at Administration screens by entering the Target PC's registry editor and changing the following settings: Default user mouse motion speed = 0; mouse threshold 1= 0; mouse threshold 2 = 0.

3. Disable all screen savers on each Target PC via the control panel.
4. Set each Target PCs background to a solid, plain, light color. Black should not be used.
5. Ensure that each Target PC is running in a standard video resolution that is currently supported by TeleReach (Figure 18).

Text Mode	OK
640x480@60Hz	OK
640x480@70Hz	Non-Standard Resolution / Unsupported
640x480@72Hz	OK
640x480@75Hz	OK
640x480@85Hz	OK
800x600@60Hz	OK
800x600@70Hz	Non-Standard Resolution / Unsupported
800x600@72Hz	OK
800x600@75Hz	OK
800x600@85Hz	OK
1024x768@60Hz	OK
1024x768@70Hz	OK
1024x768@75Hz	OK
1024x768@85Hz	OK
1152x864@60Hz	OK
1152x864@70Hz	High Resolution / Not Currently Supported
1152x864@72Hz	High Resolution / Not Currently Supported
1152x864@75Hz	OK
1152x864@85Hz	High Resolution / Not Currently Supported
1280x1024@60Hz	OK
1280x1024@70Hz	High Resolution / Not Currently Supported
No Interlace Modes Supported	

Figure 18. PC Resolutions Supported By TeleReach

Sun Target Servers

See **Appendix G: Sun Target Servers** for information on TeleReach and Sun support.

Linux Target Servers

See **Appendix H: Linux Target Servers** for information on TeleReach and Linux support.

4. PREPARE A REMOTE CONNECTION

Optional: Install TeleReach Control (TRC) Software

NOTE: To support TRC a Remote PC's operating system must be Windows '98, 2000, XP, or NT.

NOTE: This step is optional. TeleReach can be accessed from a Remote PC either via the TeleReach Control Software, or via Internet Explorer (v4.0+). Accessing TeleReach via web browser does not require any software installation on the Remote PC. See Appendix C to determine if web browser access is appropriate for you.

1. Insert TeleReach Control (TRC) CD-ROM into CD-ROM drive of Remote PC.
2. The TRC setup program will run automatically. If the setup program does not appear, right-click on your Remote PC's CD-ROM drive in Windows Explorer and select Auto Play.
3. Follow the on-screen instructions given by the InstallShield Wizard to complete TRC installation on your Remote PC. Under "Select Components," you must select either the US version for a US Remote PC keyboard, or the Japanese version for a Japanese Remote PC keyboard.
4. **NOTE:** The Japanese version of TRC enables a Japanese keyboard at the Remote PC and also requires a Japanese keyboard to be set at the Target PC. The interface information remains in English.
5. Depending upon the configuration of the Remote PC, the TRC setup program may also automatically install Direct X and Microsoft Foundation Class libraries if required.
6. If Direct X or Microsoft Foundation Class libraries where installed, then you will be directed to restart the Remote PC. Otherwise restart of the Remote PC is not required.
7. A TeleReach Icon will be added to the Remote PC desktop (Figure 19).
8. Follow the steps below to **Configure A Connection**.

Configure A Connection

1. *TRC*: Double-click **TeleReach Icon** (Figure 19) found on Remote PC desktop.
   Web Browser: Open Internet Explorer and in the "Address" text box, type in the IP address that you assigned to your TeleReach unit.
2. The **TeleReach** window (Figure 20) or TeleReach web client will appear.

TeleReach

Figure 19.
TeleReach Icon

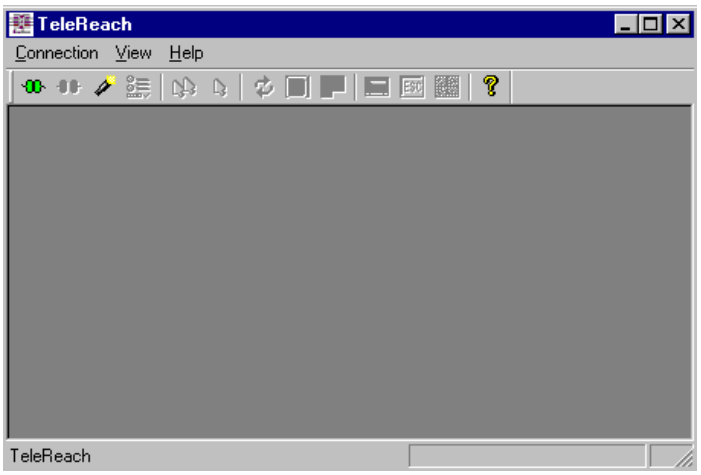


Figure 20. TeleReach Window

Figure 21. Connect Button

3. Click the **Connect** button (Figure 21).
4. The **Connect** window (Figure 22) will appear.

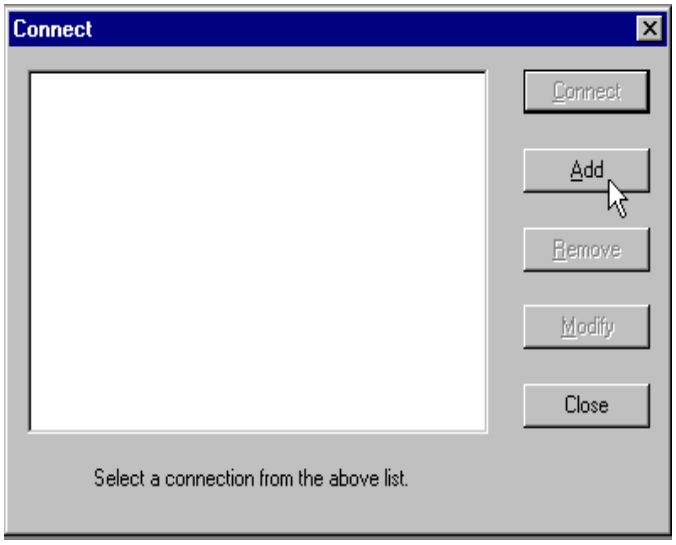


Figure 22. Connect Window

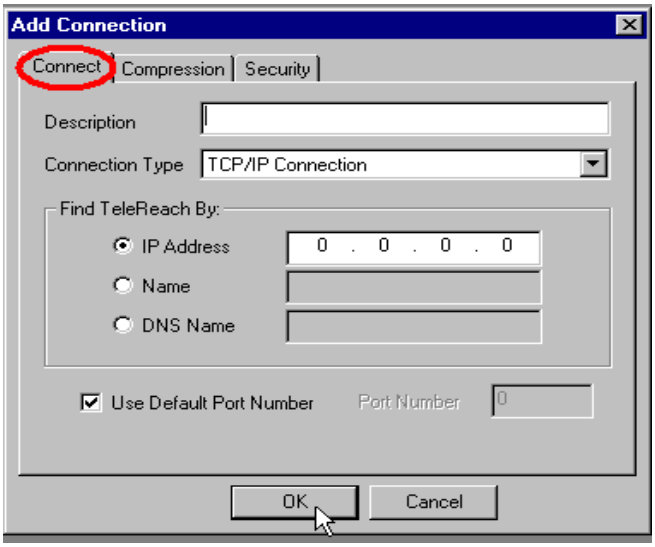


Figure 23a. Add Connection Window: Connect Tab

5. Click the <Add> button.
6. The **Add Connection** window (Figure 23a) will appear.
7. **CONNECT TAB:** Click the <Connect> tab (Figure 23a).
8. Under **Connection Type** in the drop down menu select **TCP/IP Connection** for setting up a LAN/WAN or Internet connection profile, or **Dial Up Connection** for setting up an analog telephone line modem connection profile.
   a) For a **TCP/IP Connection**, fill in desired information (Figure 23a):
      - **Description:** Type a meaningful name for the connection profile being created. This name will appear in the **Connect** window once the connection profile addition is completed.
      - **Connection Type:**
        - **TCP/IP Connection**: For LAN/WAN or Internet connections (Figure 23a).
          - **Find TeleReach By:** Choose one of the three following methods to identify the TeleReach unit for this connection profile.
            - ✓ **IP Address:** Enter the IP address assigned to the TeleReach unit.
            - ✓ **Name:** Enter the name assigned to the TeleReach unit.

            NOTE: If dynamic DHCP addressing is used for TeleReach, then Find TeleReach by Name should be used.

            a) **NOTE:** The factory default unit name for each TeleReach produced is <TeleReach>. To change the default name on a TeleReach unit and institute a unique name, see "[C] Configure TeleReach" in **8. Local Administrative Functions**.

            - ✓ **DNS Name:** Enter the DNS name assigned to the TeleReach unit.

- **Use Default Port Number:** Select the checkbox to use default port (5000), or deselect the check box and choose an alternate port number.

NOTE: Firewall security must enable two-way communication through the default port 5000 or the selected non-default port. If a non-default port is utilized, the selected port number entered here must also be designated to match at the TeleReach unit in the **Network Configuration** screen (Figure 14) – see **TeleReach Power Up and Network or Dial-up Installation** in **3. Setup**.

b) For a **Dial Up Connection**, fill in desired information (Figure 23b):

- **Description:** Type a meaningful name for the connection profile being created. This name will appear in the **Connect** window once the connection profile addition is completed.
- **Connection Type:**
  - **Dial-Up Connection:** For a dial-up modem connection from an analog telephone line (Figure 23b).
    - **Phone Number:** Enter the telephone number assigned to the TeleReach unit's connected analog telephone line.
    - **Modem:** Select the modem utilized by your Remote PC.
  - **Use Default Port Number:** Select the checkbox to use default port (5000), or deselect the check box and choose an alternate port number.

NOTE: Firewall security must enable two-way communication through the default port 5000 or the selected non-default port. If a non-default port is utilized, the selected port number entered here must also be designated to match at the TeleReach unit in the **Network Configuration** screen (Figure 14) – see **TeleReach Power Up and Network or Dial-up Installation** in **3. Setup**.

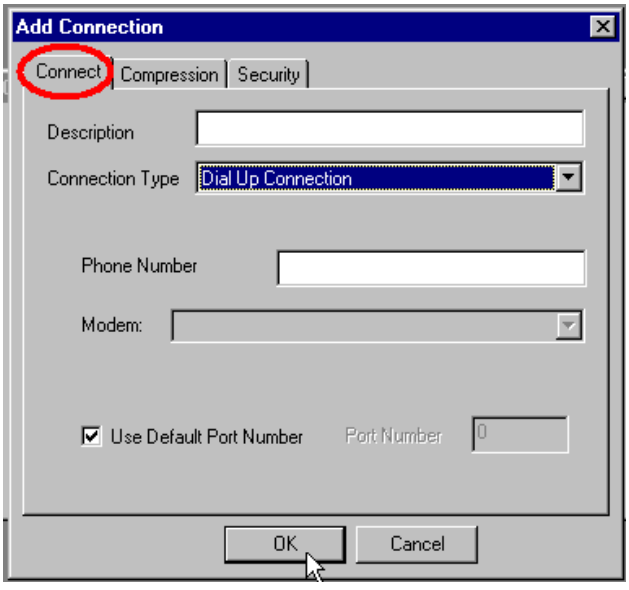


Figure 23b. Add Connection Window: Connect Tab

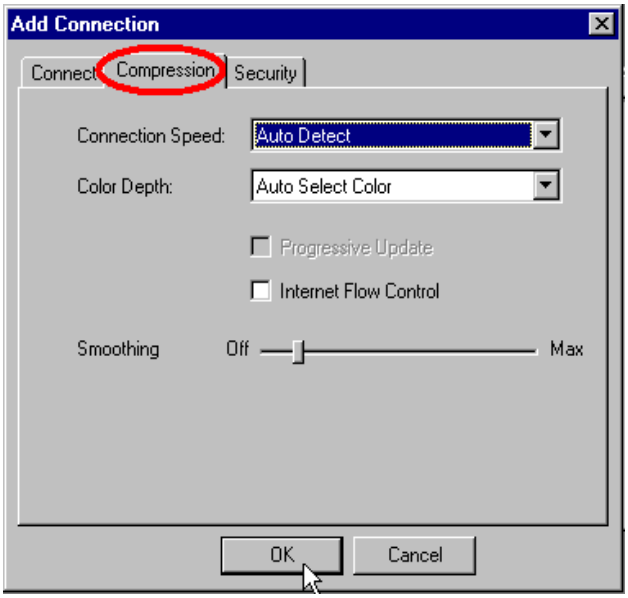


Figure 23c. Add Connection Window: Compression Tab

9.

10. **COMPRESSION TAB:** To select compression settings, fill in the desired information under the **Compression Tab** in the **Add Connection** Window (Figure 23c).

NOTE: Simply leaving the default compression settings will ensure a successful initial remote connection. However, changes to compression settings can be made now, during configuration of the connection, or at any time - during a remote connection by pressing the **Properties** button (Figure 40) on the TeleReach toolbar, or before remote connection is established, by modifying an existing connection profile via the <Modify> button in the **Connect** window (Figure 22).

- **Connection Speed:** Match the connection speed as closely as possible to the true anticipated speed of your connection to maximize TeleReach's performance.
  - **Auto Detect (default):** During remote connection, the TRC software will detect the maximum connection speed. TRC will keep the communication flow between the remote PC and TeleReach at this maximum possible speed.
  - **100mb Ethernet or 10mb Ethernet:** For LAN/WAN network connections with appropriate corresponding speeds.
  - **1.5mb (Max DSL/T1), 1mb (Fast DSL/T1), 512kb (Medium DSL/T1), 384kb (Slow DSL/T1):** For DSL/T1 connections.
  - **256kb (Cable), 128kb (Dual ISDN):** For cable and ISDN connections.
  - **56kb (ISP Modem), 33kb (Fast Modem), 24kb (Slow Modem):** For modem connections.
- **Color Depth:** Select the desired color depth for this connection profile. The color depth chosen will determine the amount of color data TeleReach captures and compresses for delivery to the Remote PC. Higher color depths will show more vibrant color, but may slow performance speed. Lower color depths will maximize the speed of TeleReach's performance.
  - **Auto Select Color (default):** TeleReach will automatically select the best color mode for the chosen connection speed.
  - **8-bit RGB Color:** High color. This large color data processing is recommended for Network connections or fast Internet connections.
  - **5-bit Color, 4-bit Color:** Medium color. Recommended for slow Internet connections or fast modem connections.
  - **4-bit Gray, 3-bit Gray, 2-bit Gray:** TeleReach will convert all colors captured to shades of gray. Recommended for very slow connections, or when faster performance is favored over color.
  - **Black and White:** TeleReach will convert all colors captured to only the colors black and white. Recommended for extremely slow connections, or when very fast performance is favored over color and gray-scale.
- **Progressive Update:** TeleReach starts with black and white and then updates the video image over time, filling in gray-scale or color. Although hardly noticeable for fast connections, at very slow modem speeds this enables the remote user to see an initial black and white image of the Target Server screen. Color and gray scale information is then filled in after the first black and white image is communicated. (default is Automated setting – see NOTE below).
  - **Checkbox selected:** Enables progressive update mode. Recommended for slow connections.
  - **Checkbox de-selected:** Disables progressive update mode.

NOTE: When Color Depth is set to Auto Select Color (default), Progressive Update is automated. TeleReach will enable/disable Progressive Update as needed, disabling it for fast connections and enabling it for slow connections.

- **Internet Flow Control:** Some Internet connections transmit data unevenly, causing pauses in the data stream. This may result in a Remote PC video image that is slow to update. Internet Flow Control adjusts TeleReach's video data streaming process to compensate.
  - **Checkbox selected:** Enables Internet Flow Control.
  - **Checkbox de-selected (default):** Disables Internet Flow Control.
- **Smoothing:** Smoothing detects video pixels that stray from the majority, and assigns them the closest matching majority color. Helps reduce noise to improve TeleReach's performance speed. After initial analysis of a Target Server's video image, captured video data undergoes a smoothing algorithm prior to compression and delivery to a Remote PC.
  - **Off:** No video smoothing
  - **Max:** The greatest video smoothing possible, resulting in the largest reduction of video noise and faster TeleReach performance.

NOTE: Higher settings for smoothing may result in a poor video image. If too many color pixels are assigned majority colors, then a color flattening effect may occur, diminishing the detail of the video image.

11. **SECURITY TAB:** To enter security key, fill in the assigned security key on the **Security Tab** in the **Add Connection** Window (Figure 24):

NOTE: Simply leaving the security tab default settings – blank, with no key entered – will ensure a successful initial remote connection if no private key has been set by the administrator on the **Security Configuration** screen (Figure 56) – see **8. Administrative Funcitons**. However, entries to the Security tab can be made now or later on before a remote connection is established, by modifying an existing connection profile via the <Modify> button in the **Connect** window (Figure 22) before remote connection is established.

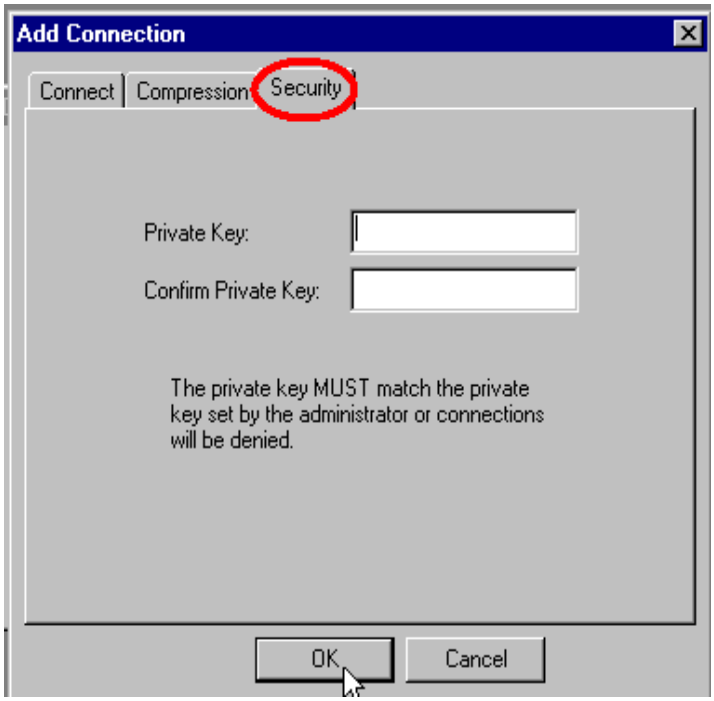


Figure 24. Add Connection Window – Security Tab

- **Private Key:** Enter the private key password that matches the private key entered by the Administrator at the TeleReach Console (if any) in the **Security Configuration** screen (Figure 56) – see **8. Administrative Functions**. This private key acts as a second level of password protection. Only remote users that know the private key password, in addition to their user name and password, can log in and connect to TeleReach.
  - **Confirm private key: Enter private key password again for re-confirmation.**

12. Click <OK> to save the configured connection profile or <Cancel> to exit without saving.

Other Connect Window Buttons

Once a connection profile has been established it can be removed or modified at a later date.

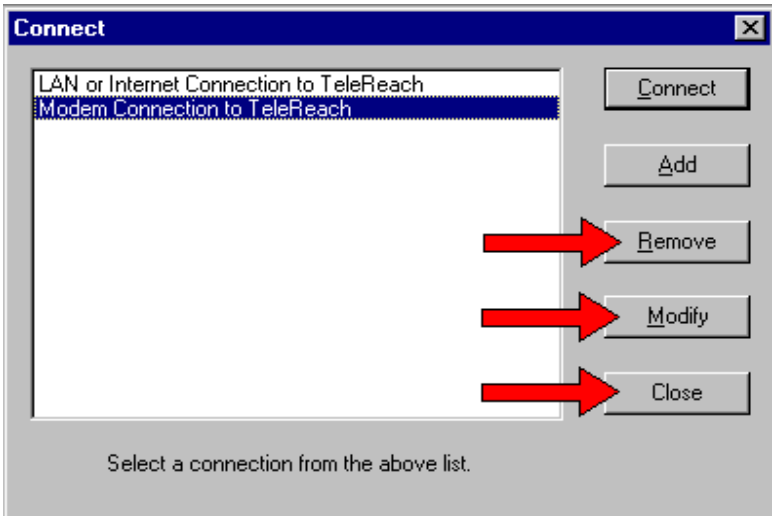


Figure 25. Connect Window Buttons

Remove

Removes or deletes a selected connection profile.

Modify

Click the <Modify> button to modify a selected connection profile. This opens the **Modify Connection** window, which is identical to the **Add Connection** window (Figures 23a, 23b, and 23c). The **Modify Connection** window enables modification of existing connection profiles.

Cancel

Closes out the **Connect** window (Figure 25).

5. REMOTE CONNECTION TO TELEREACH

TeleReach must be powered ON for a successful remote connection. A user can be logged on at the TeleReach Admin Console, but this is not a requirement.

Steps that must be performed prior to establishing a remote connection:

1. Install and configure TeleReach unit - See 2. Installation and 3. Setup.
2. Fine-tune connected KVM configuration and Target Servers for optimal TeleReach performance – See KVM Configuration Fine-Tuning in 3. Setup.
3. (Optional) Install TRC software on Remote PC – See Install TeleReach Control (TRC) Software on Remote PC in 4. Prepare A Remote Connection.
4. Configure a remote connection – See Configure A Connection in 4. Prepare A Remote Connection.

Establishing A Remote Connection

1. *TRC*: Double-click **TeleReach Icon** (Figure 25) found on Remote PC desktop.
   Web Browser: Open Internet Explorer and in the "Address" text box, and type in the IP address that you assigned to your TeleReach unit.
2. The **TeleReach** window or TeleReach web client (Figure 26) will appear.

TeleReach

Figure 25.
TeleReach Icon

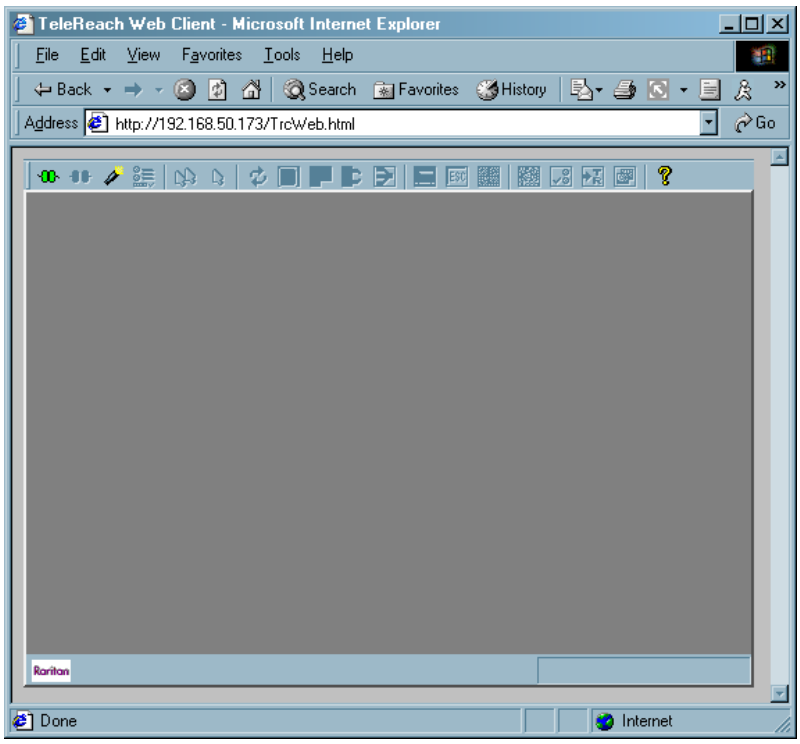


Figure 26. TeleReach Web Client in Internet Explorer

3. Click the **Connect** button (Figure 27).
4. The **Connect** window (Figure 28) appears, listing all created connection profiles.

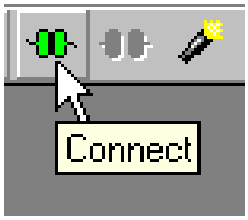


Figure 27. Connect Button

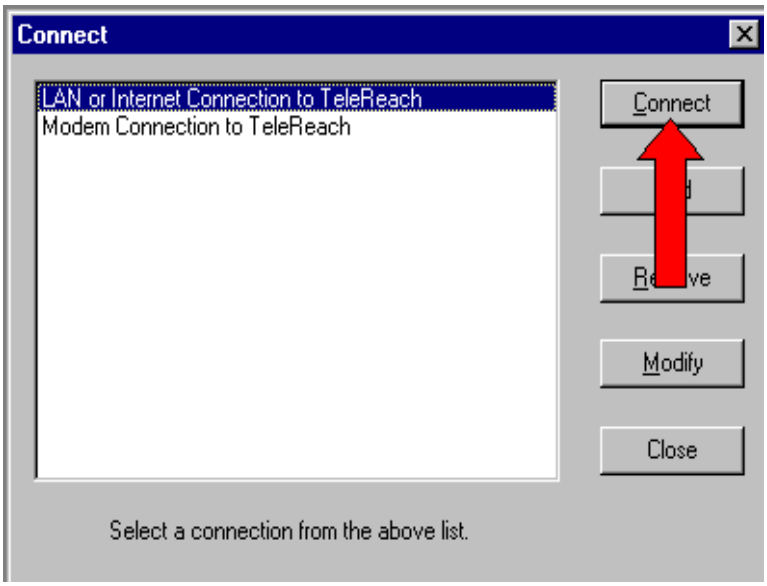


Figure 28. Connect Window – Connect Button

5. Click the desired connection profile to select it, and then click the <Connect> button.
6. The remote **Login** window (Figure 29) will appear.

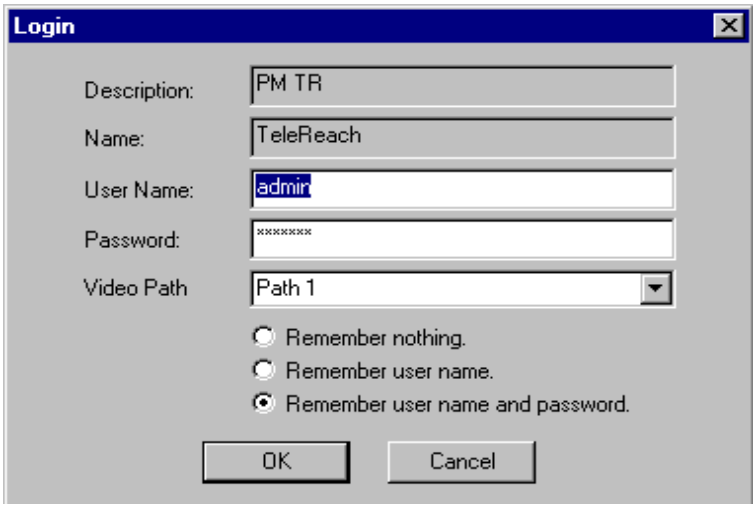


Figure 29. Login Window

7. Type in your User Name and Password.

NOTE: For administrator information on setting up user name and password profiles see **8. Local Administrative Functions.** User profiles can be set via TeleReach or by utilizing the RADIUS server.

TeleReach's default Login user name is <admin> with the password <raritan>. This user has administrative privileges. **Passwords are case sensitive and must be entered in the exact case combination in which they were created. The default password <raritan> must be entered entirely in lower case letters.**

8. Video Path. Use the pull down menu to select the Video Path to which you wish to connect.

NOTE: For TR361 models there is only one path, so there will be no choice of Video Path on the Login Window. For TR362, TR363, or TR464 models with a set Path Configuration of 1 path (see 48a and 49a), the Video Path drop down selection will not appear on the Login Window—Instead, since all paths lead to the same KVM configuration, TeleReach will automatically connect to the next open path.

9. Select <Remember nothing> to keep user name and password from automatically appearing on next login, select <Remember user name> to automatically supply this user name on next login, or select <Remember user name and password> to automatically supply this user name and its password on next login.
10. Click <OK>.
11. TeleReach will AutoSense the video of the image it is currently receiving from the KVM switch or connected server.
12. After a few seconds the **TeleReach** window will appear, showing a view of the video image currently being received by TeleReach from the connected server or KVM switch. This can be the KVM's On-Screen User Interface (OSUI) **Log in** menu, or a view of the currently selected Target Server (Figure 30).
13. *TRC:* You are now directly connected to the connected server or KVM switch.
    Web Browser: To directly access the connected server or KVM switch, use your mouse to click on the Title Bar displaying the name of your TeleReach unit.

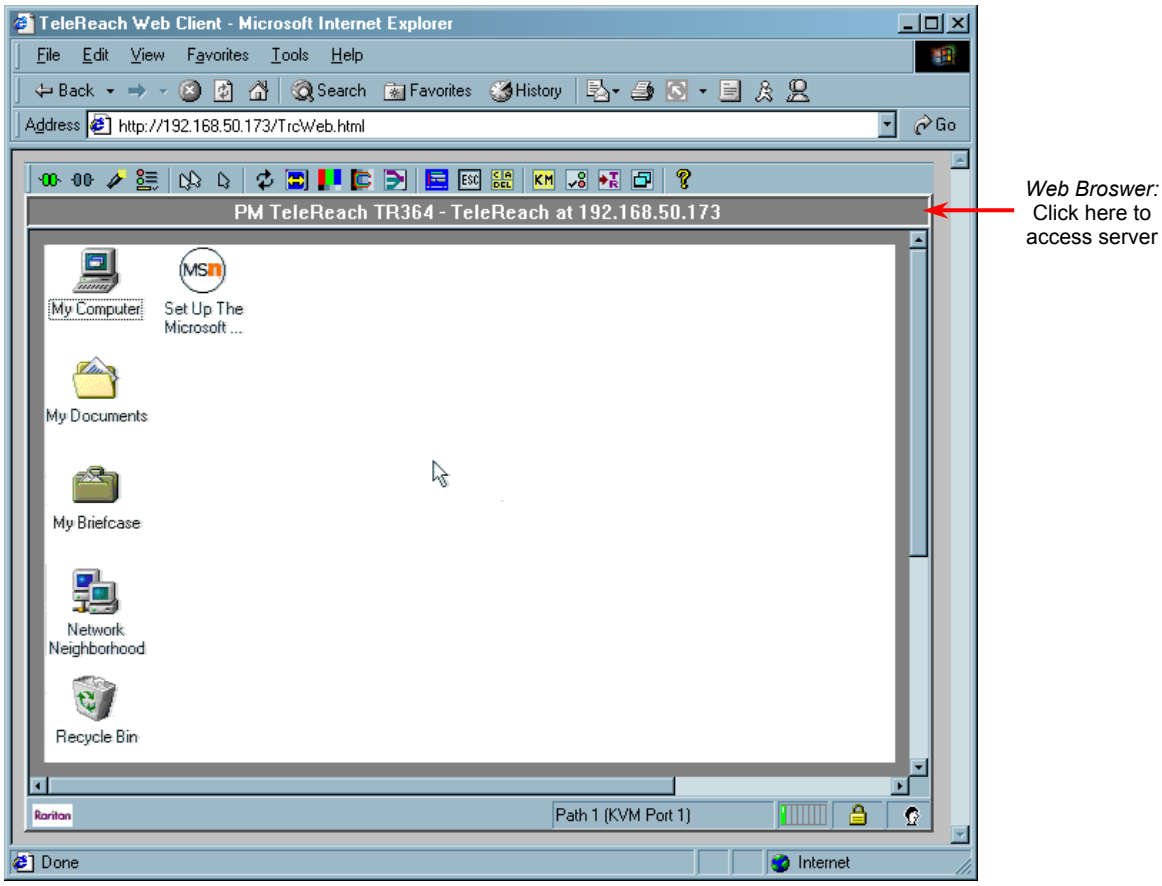


Figure 30. Target Server Viewed Remotely Through TeleReach Client Window in Internet Explorer

Browse For A Connection

Follow the steps below to see a listing of all TeleReach units currently connected to the same network or same analog telephone line as the Remote PC.

NOTE: Browse will only return TeleReach units using the default TCP port number 5000

NOTE: The default port must be open for Browse, which utilizes UDP, to function.

NOTE: The Browse connection method is the only method of connection available when DHCP IP addressing is being used.

1. In the **TeleReach** window (Figure 26), click the **Browse** button (Figure 31) on the toolbar.
2. The **Browse** window (Figure 32) will open.

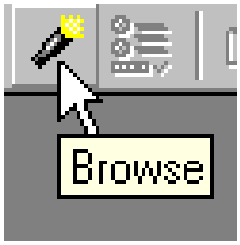


Figure 31. Browse Button

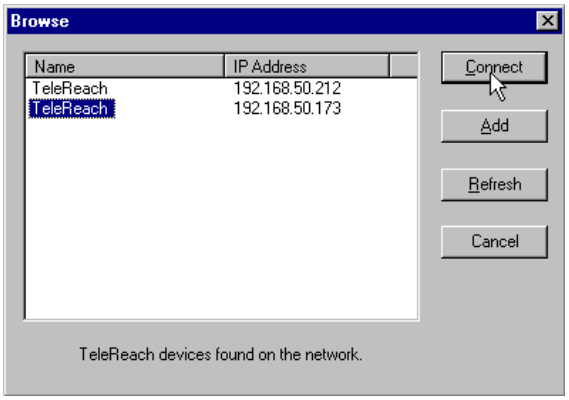


Figure 32. Browse Window

3. Click the TeleReach that you wish to connect to, highlighting the selection, and then click the <Connect> button.
4. The remote **Login** window (Figure 29) will appear.
5. Type in your User Name and Password.

NOTE: For administrator information on setting up user name and password profiles see **8. Local Administrative Functions.** User profiles can be set via TeleReach or by utilizing the RADIUS server.

TeleReach's default Login user name is <admin> with the password <raritan>. This user has administrative privileges. **Passwords are case sensitive and must be entered in the exact case combination in which they were created. The default password <raritan> must be entered entirely in lower case letters.**

6. Video Path. Use the pull down menu to select the Video Path to which you wish to connect.

NOTE: For TR361 models there is only one path, so there will be no choice of Video Path on the Login Window. For TR362, TR363, or TR464 models with a set Path Configuration of 1 path (see 48a and 49a), the Video Path drop down selection will not appear on the Login Window—Instead, since all paths lead to the same KVM configuration, TeleReach will automatically connect to the next open path.

7. Select <Remember nothing> to keep user name and password from automatically appearing on next login, select <Remember user name> to automatically supply this user name on next login, or select <Remember user name and password> to automatically supply this user name and its password on next login.

8. Click <OK>.
9. TeleReach will AutoSense the video of the image it is currently receiving from the KVM switch.
10. After a few seconds the **TeleReach** window will appear, showing a view of the video image currently being received by TeleReach from the user port of the connected server or KVM switch.

Ending A Remote Session & Disconnecting From TeleReach

1. Click the **Disconnect** button (Figure 33).
2. A **Disconnect** window (Figure 34) will open. Click <OK>.
3. The **TeleReach** window (Figure 35) or TeleReach web client will remain. Close out this window.

Figure 33. Disconnect Button

Figure 34. Disconnect Window

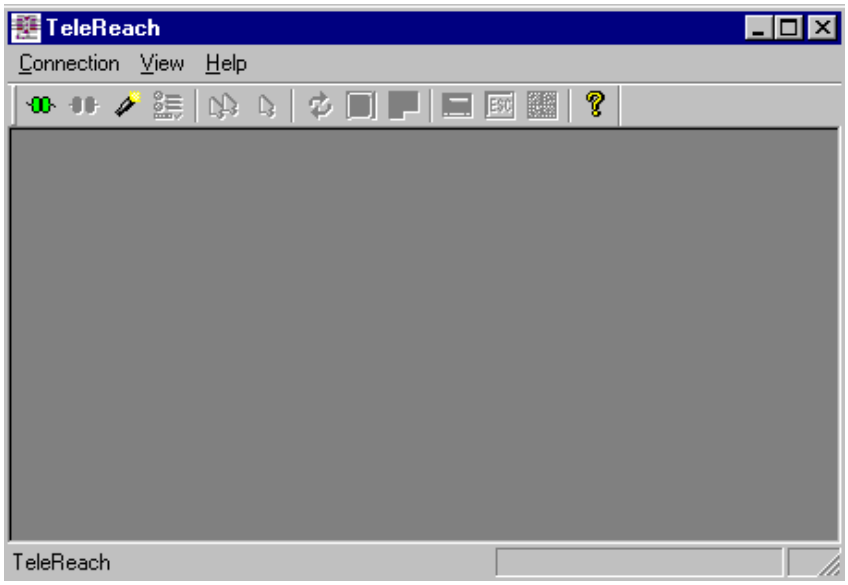


Figure 35. TeleReach Window

6. REMOTE OPERATION

When a remote connection to TeleReach is established – See **5. Remote Connection To TeleReach** -, a view of the video image that TeleReach is currently capturing will be seen through the **TeleReach** window on the Remote PC desktop. This can be a Target Server desktop (Figure 36), or a KVM On-Screen User Interface (OSUI) menu.

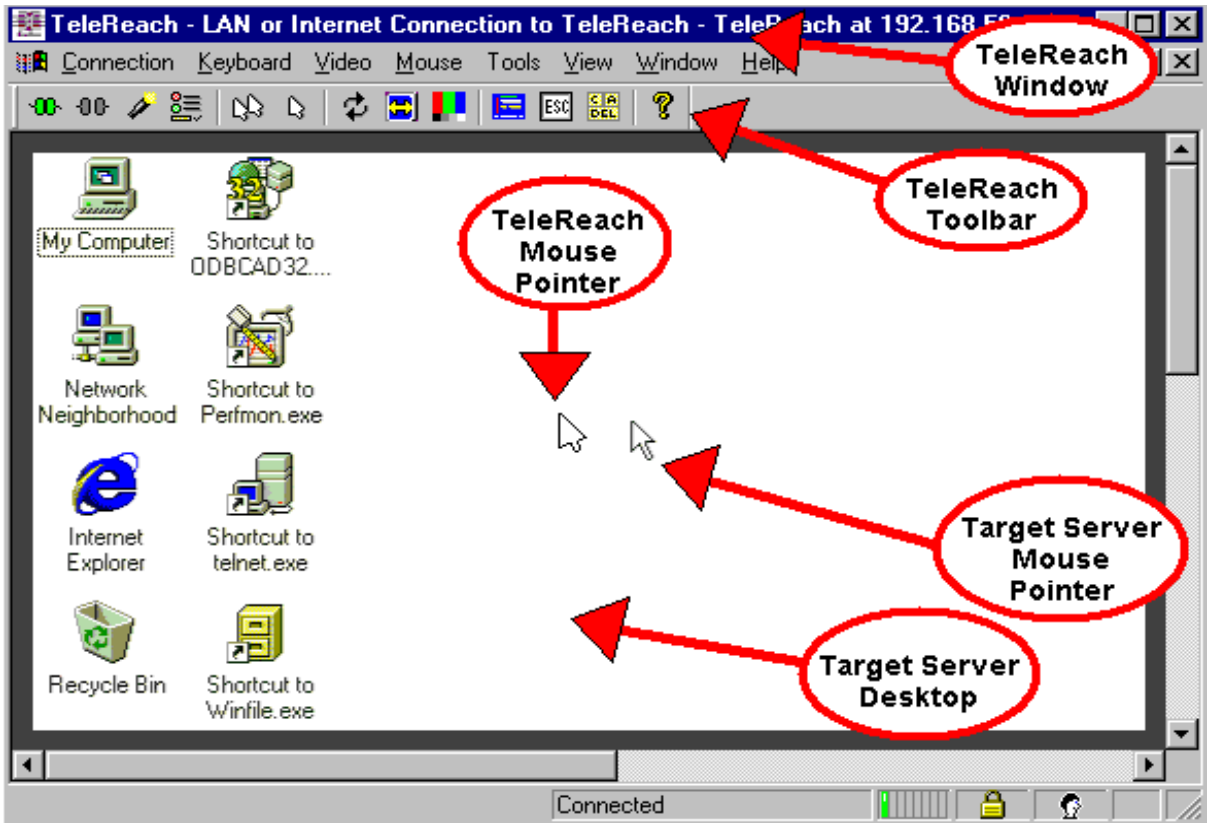


Figure 36. Viewing a Target Server Desktop with TeleReach from a Remote PC

TeleReach Window	Window created by the TRC software. During a remote connection this window displays the video data currently being captured by TeleReach. In the figure above, TeleReach is capturing the image of a Target Server desktop.
TeleReach Toolbar	Buttons representing the most commonly used TeleReach functions.
TeleReach and Target Server Mouse Pointers	The TeleReach Mouse Pointer is a mouse pointer created by the TRC software. Inside the **TeleReach** window, it leads the Target Server Mouse Pointer. Outside the TeleReach window, it accesses the **TeleReach** window's toolbar icons and pull-down menus. The Target Server Mouse Pointer, which follows the TeleReach Mouse Pointer, is the mouse pointer that controls the Target Server.
Target Server Desktop	The desktop or monitor of the Target Server currently being viewed.

NOTE: A gray border will surround the video displayed within the TeleReach window of the TRC software, when the scroll bar checkbox is selected (default) in the Tools pull-down menu under Options. Placing the TeleReach Mouse Pointer in the gray area will scroll the viewed image in the direction of the mouse pointer.

TeleReach Window Toolbar Buttons

Toolbar Button	Key Stroke Combination	Button Name	Function
	<Ctrl-Alt-C>	Connect	Opens the Connect window for access to TeleReach from the Remote PC.
	<Ctrl-Alt-X>	Disconnect	Disconnects the Remote PC from TeleReach, ending a remote communication session.
	<Ctrl-Alt-B>	Browse	Searches, from the Remote PC, for TeleReach units connected to the same network or analog telephone line as the Remote PC.
	<Ctrl-Alt-P>	Properties	Opens the Modify Connection window to change Connection Speed and Color Depth. Also enables alteration of Progressive Update, Internet Flow Control, and Smoothing.
	<Ctrl-Alt-S>	Synchronize Mouse	Realigns Target Server Mouse Pointer with TeleReach Mouse Pointer.
	<Ctrl+Alt+Q>	Single Mouse Cursor	Toggle button. Deletes the TeleReach Mouse Pointer from the screen, showing only the Target Server's Mouse Pointer inside the TeleReach window. Recommended for LAN or very fast Internet connections only. To invoke the TeleReach Mouse Pointer for access to Toolbar Icons, simultaneously press the keys <Ctrl+Alt+Q>.
	<Ctrl-Alt-R>	Refresh Screen	Refreshes video screen, filling in any bits of missing video data.
	<Ctrl-Alt-A>	Auto-sense Video	Manually senses and aligns TeleReach with video settings and image currently being viewed.
	none	Video Settings	Opens the Settings window to adjust the Video Settings, including Noise Filter, PLL Settings, Color Settings, and auto-sensing or automatic sensing of video settings. See 7. Fine-Tune TeleReach Control Software for information on automatic calibration of Color Settings.
	None	Calibrate Color	(Web Client Only) Runs color calibration routine (see "Fine-Tune TeleReach Control Software" for usage).
	None	Change Video Paths	(Web Client Only) Allows user to switch to a different video path .
	none	Enter On-Screen Menu	Accesses On-Screen User Interface of connected KVM switch.
ESC	<ESC>	Exit On-Screen Menu	Deactivates On-Screen User Interface of connected KVM switch.
CA DEL	<Ctrl-Alt-D>	Send Ctrl+Alt+Del	Sends a Control-Alt-Delete command to the Target Server.
KM	none	Keyboard Macros	(Web Client Only) Invokes Keyboard Macros screen.

	none	Options	(Web Client Only) Invokes program options dialog box.
	none	Restart TeleReach	(Web Client Only) Sends command to restart TeleReach unit.
	none	Admin Console View	(Web Client Only) Toggles view to/from TeleReach Administrative Console [for authorized users].
	none	About	Displays TeleReach Control software (TRC) version number, and copyright.

TeleReach Mouse Pointer

When remotely viewing a Target Server that has a mouse device, you will see two mouse pointers inside the **TeleReach** window. The **TeleReach Mouse Pointer**, generated by the TRC software, leads the **Target Server Mouse Pointer** when inside the TeleReach window. Outside the TeleReach window, it accesses the **TeleReach** window's toolbar icons and pull-down menus. The **Target Server Mouse Pointer**, which follows the **TeleReach Mouse Pointer**, is the mouse pointer that controls the Target Server. TeleReach uses the larger **TeleReach Mouse Pointer** to lead the **Target Server Mouse Pointer** to a desired position.

NOTE: For better alignment between mouse pointers, click the **Synchronize Mouse** button on the TeleReach toolbar, or simultaneously press the keys <Ctrl-Alt-S>. This will manually re-align the two mouse pointers. If mouse pointers remain out of sync, click the **Auto-sense Video** button on the TeleReach toolbar, or simultaneously press the keys <Ctrl-Alt-A>.

It is extremely important that you read "Fine-Tune Connected Target Servers" in section **3. Quick Start Setup** for detailed directions regarding mouse settings of target servers. Incorrect mouse settings will result in mouse synchronization problems during remote operation.

Switching Servers With A Raritan KVM Switch

The steps below configure the TeleReach window's Enter On-Screen Menu and Exit On-Screen Menu toolbar buttons (Figure 38) to work in conjunction with a Raritan KVM Switch attached to TeleReach.

NOTE: To access the KVM OSUI, remote users can also simply enter the KVM switch hotkey at the Remote PC keyboard. This is true of both Raritan and non-Raritan KVM products. If using a Raritan KVM switch, however, configuring TeleReach's switching toolbar buttons is recommended.

Configuring KVM Switch Hotkey

To utilize the TeleReach toolbar's switching icons, TeleReach must be set to trigger the On-Screen User Interface (OSUI) Hotkey of the connected KVM switch. This is a one-time installation procedure that does not need to be repeated, unless the KVM switch's Hotkey designation is changed in the future.

1. The OSUI Hotkey for a Raritan KVM Switch can be the <Scroll Lock>, <Num Lock>, or <Caps Lock> key. Determine which of these Hotkeys activates your switch's OSUI.
2. *TRC:* In the **TeleReach** window's menu, select Tools > Options.
   Web Browser: Click on the **Options** button in the toolbar (see "TeleReach Window Toolbar Buttons" on previous page for reference)
3. The **Options** window (Figure 37) will appear.
4. Select the appropriate Hotkey that activates the connected KVM switch's OSUI. **Scroll Lock+Scroll Lock** = <Scroll Lock>, **Num Lock+Num Lock=** <Num Lock>, and **Caps Lock+Caps Lock** = <Caps Lock>.
5. Click <OK> to continue.

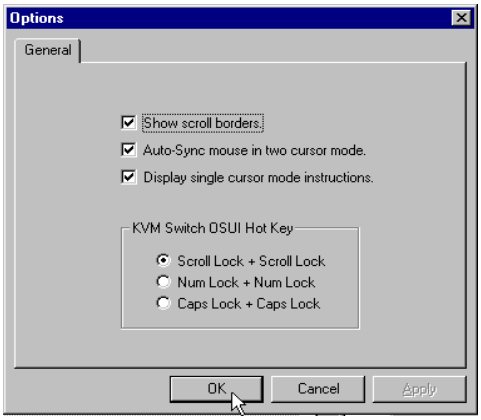


Figure 37. Options Window

Switching Between Target Servers

Once TeleReach has been configured to match the base KVM switch's hotkey, switching between Target Servers can be performed with TeleReach toolbar buttons (Figure 38).

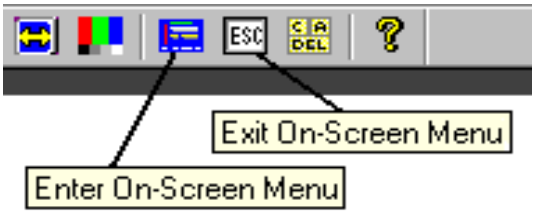


Figure 38. TeleReach Toolbar Switching Buttons

To Invoke The OSUI:

Click the **Enter On-Screen Menu** button (Figure 38). The On-Screen User Interface (OSUI) of the connected KVM switch will appear (Figure 39).

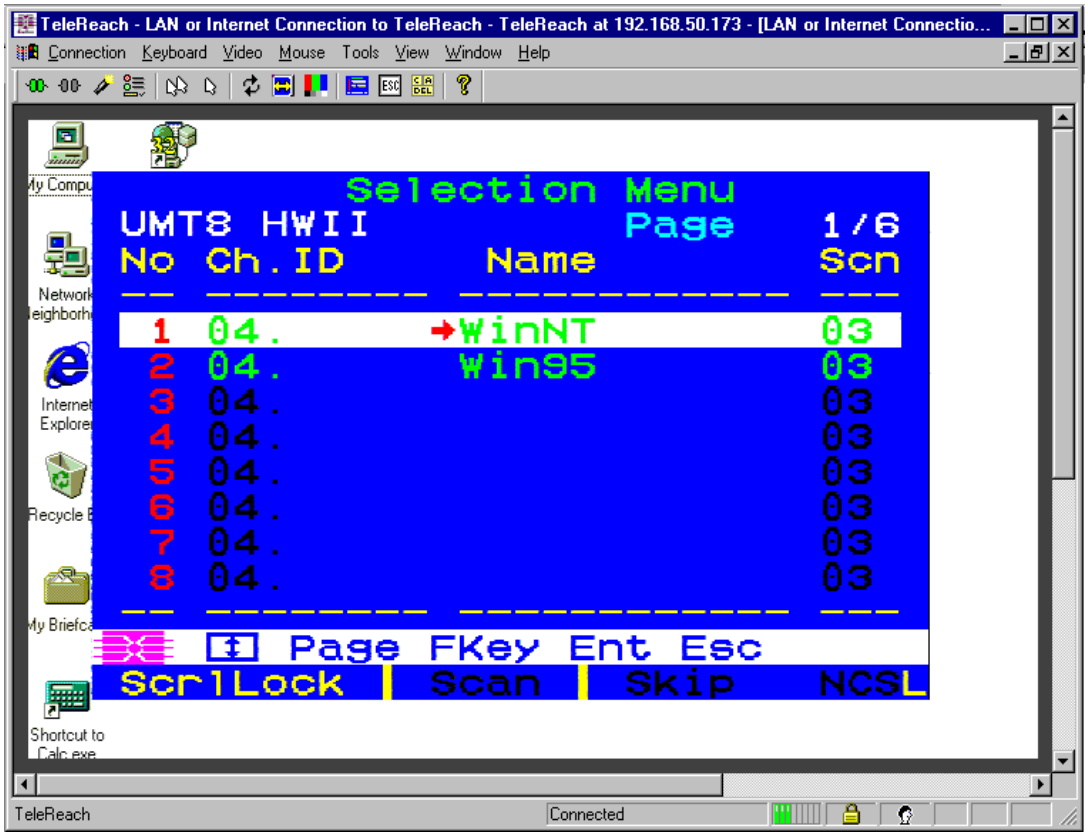

TeleReach - LAN or Internet Connection to TeleReach - TeleReach at 192.168.50.173 - [LAN or Internet Connectio...
Connection Keyboard Video Mouse Tools View Window Help
Selection Menu
UMT8 HWII Page 1/6
No Ch.ID Name Scn
1 04. WinNT 03
2 04. Win95 03
3 04. 03
4 04. 03
5 04. 03
6 04. 03
7 04. 03
8 04. 03
Page FKey Ent Esc
ScrlLock Scan Skip NCSL
TeleReach
Connected

Figure 39. On-Screen User Interface (OSUI) of Switch

To Exit The OSUI:

Click the **Exit On-Screen Menu** button (Figure 38), or press the <ESC> key.

Important Video Buttons

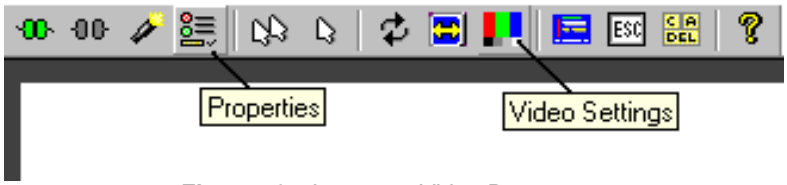


Figure 40. Important Video Buttons

1. Properties button (Figure 40):

Click the **Properties** button to open the **Modify Connection** window (Figure 41). Fill in the desired information under the **Compression** tab to make changes to the speed and color properties of the active remote connection. Click <OK> when finished.

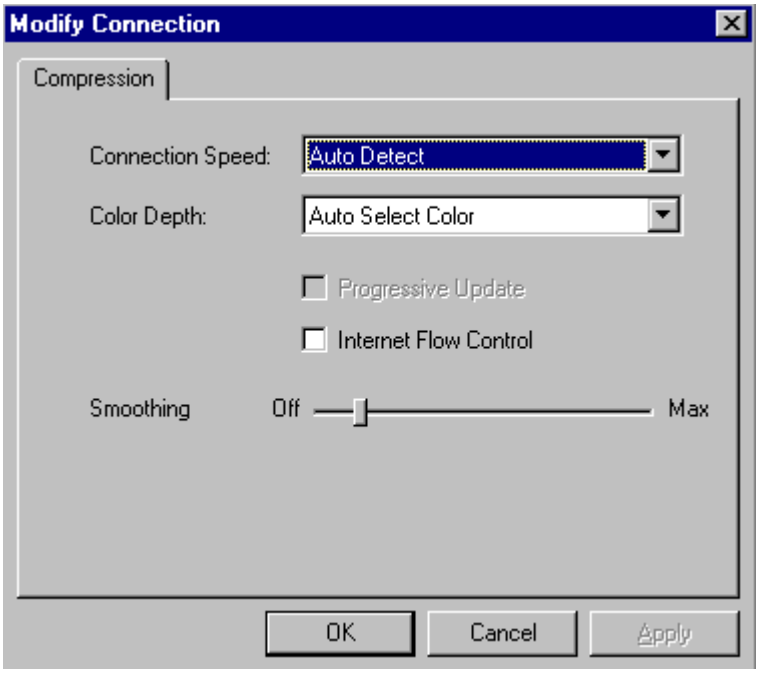


Figure 41. Modify Connection Window

- **Connection Speed:** Match the connection speed as closely as possible to the true anticipated speed of your connection to maximize TeleReach's performance.
  - **Auto Detect (default):** During remote connection, the TRC software will detect the maximum connection speed. TRC will keep the communication flow between the remote PC and TeleReach at this maximum possible speed.
  - **100mb Ethernet or 10mb Ethernet:** For LAN/WAN network connections with appropriate corresponding speeds.
  - **1.5mb (Max DSL/T1), 1mb (Fast DSL/T1), 512kb (Medium DSL/T1), 384kb (Slow DSL/T1):** For DSL/T1 connections.
  - **256kb (Cable), 128kb (Dual ISDN):** For cable and ISDN connections.
  - **56kb(ISP Modem), 33kb (Fast Modem), 24kb (Slow Modem):** For modem connections.
- **Color Depth:** Select the desired color depth for the connection. The color depth chosen will determine the amount of color data TeleReach captures and compresses for delivery to the Remote PC. Higher color depths will show more vibrant color, but may slow performance speed. Lower color depths will maximize the speed of TeleReach's performance.
  - **Auto Select Color (default):** TeleReach will automatically select the best color mode for the chosen connection speed.
  - **8-bit RGB Color:** High color. This large color data processing is recommended for Network connections or fast Internet connections.
  - **5-bit Color, 4-bit Color:** Medium color. Recommended for slow Internet connections or fast modem connections.

- **4-bit Gray, 3-bit Gray, 2-bit Gray:** TeleReach will convert all colors captured to shades of gray. Recommended for very slow connections, or when faster performance is favored over color.
- **Black and White:** TeleReach will convert all colors captured to only the colors black and white. Recommended for extremely slow connections, or when very fast performance is favored over color and gray-scale.

- **Progressive Update:** TeleReach starts with black and white and then updates the video image over time, filling in gray-scale or color. Although hardly noticeable for fast connections, at very slow modem speeds this enables the remote user to see an initial black and white image of the Target Server screen. Color and gray scale information is then filled in after the first black and white image is communicated. (default is Automated setting – see NOTE below).
  - **Checkbox selected:** Enables progressive update mode. Recommended for slow connections.
  - **Checkbox de-selected:** Disables progressive update mode.

  NOTE: When Color Depth is set to Auto Select Color (default), Progressive Update is automated. TeleReach will enable/disable Progressive Update as needed, disabling it for fast connections and enabling it for slow connections.
- **Internet Flow Control:** Some Internet connections transmit data unevenly, causing pauses in the data stream. This may result in a Remote PC video image that is slow to update. Internet Flow Control adjusts TeleReach's video data streaming process to compensate.
  - **Checkbox selected:** Enables Internet Flow Control.
  - **Checkbox de-selected (default):** Disables Internet Flow Control.
- **Smoothing:** Smoothing detects video pixels that stray from the majority, and assigns them the closest matching majority color. Helps reduce noise to improve TeleReach's performance speed. After initial analysis of a Target Server's video image, captured video data undergoes a smoothing algorithm prior to compression and delivery to a Remote PC.
  - **Off:** No video smoothing
  - **Max:** The greatest video smoothing possible, resulting in the largest reduction of video noise and faster TeleReach performance.

  NOTE: Higher settings for smoothing may result in a poor video image. If too many color pixels are assigned majority colors, then a color flattening effect may occur, diminishing the detail of the video image.

2. Video Settings button (Figure 40):

   Click the **Video Settings** button to open the **Settings** window (Figure 42) to adjust the Noise Filter, PLL Settings, Color Settings, and auto-sensing of video, under the **Video Settings** tab. These settings manually adjust the way TeleReach captures the video of each Target Server. Generally if the video image of each Target Server is set correctly; with solid non-black, light colored backgrounds and no screen savers; then clear video occurs by simply clicking the **Auto-sense Video** button or changing channels, to automatically re-sense the video of a Target Server.

   Contact Raritan's TeleReach Technical Support staff for manual fine-tuning of these settings.

See **7. Fine-Tune TeleReach Control Software** for information on Automatic Calibration of Color Settings.

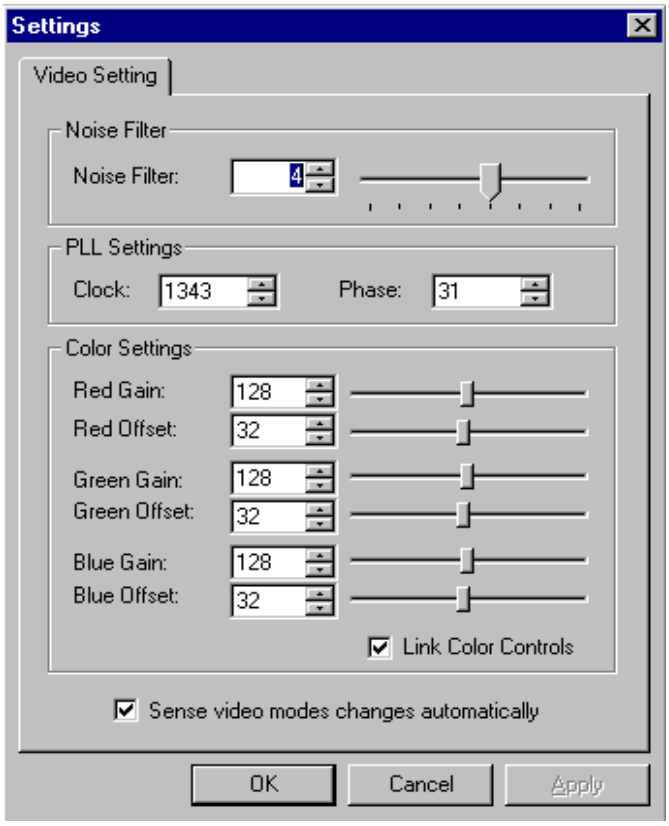


Figure 42. Video Settings Window

- **Noise Filter:** TeleReach can filter out small, false color variations, which occur due to variability in a Target Server's analog video signal. Higher Noise Filter settings tell TeleReach to transmit new video only if a larger color variation has occurred. This keeps video data transmission levels lower, increasing the speed of TeleReach's performance.
  - **Noise Filter = 0:** Minimum Noise Filter setting. TeleReach will do very little noise filtering and will transmit nearly any change in the video image.
  - **Noise Filter = 7:** Maximum Noise Filter settings. TeleReach will only transmit very significant changes in the video image.

  NOTE: A lower Noise Filter setting is recommended. Although higher settings will stop the needless transmission of false color variations, true and intentional small changes to a video image may not be transmitted.

- **PLL Settings:** If the video image looks extremely blurry or unfocused, the PLL Settings for clock and phase can be adjusted until a better image results on the active Target Server.
  - **Clock:** Horizontal sync divider to produce pixel clock. Controls how quickly video pixels are displayed across the video screen. Changes made to clock settings cause the video image captured to stretch or shrink horizontally. Odd number settings are recommended.
  - **Phase:** Phase values range from 0 to 31 and will wrap around. Stop at the phase value that results in the best video image for the active Target Server.

- **Color Settings:** Gain control can be thought of as contrast adjustment. Offset control can be thought of as brightness adjustment. These settings can be adjusted manually or **see 7. Fine-Tune TeleReach Control Software** for information on automatic calibration of Color Settings.
  - **Red Gain:** Controls the amplification of the red signal.
  - **Red Offset:** Controls the bias of the red signal.
  - **Green Gain:** Controls the amplification of the green signal.
  - **Green Offset:** Controls the bias of the green signal.
  - **Blue Gain:** Controls the amplification of the blue signal.
  - **Blue Offset:** Controls the bias of the blue signal.
    - **Link Color Controls:** Makes all the gain slide adjusters move in unison when any one color's gain slide is moved. Makes all the offset slide adjusters move in unison when any one color's offset slide is moved.
- **Sense video mode changes automatically:** Determines whether TeleReach will automatically update the video image being sent to the Remote PC each time it detects a change in video at the Target Server.
  - **Checkbox selected (default):** TeleReach will automatically re-sense the video data of the Target Server each time it senses a change in the Target Server's video image. Auto sensing of video is recommend and can be complimented by performing a manual video sensing at any time by pressing the **Auto-sense video** button.
  - **Checkbox de-selected:** Recommended for BIOS access of a Target Server. Video auto-sensing slows remote viewing of the reboot process and makes it difficult to send BIOS access keystrokes to the Target Server from a Remote PC, because auto-sensing tells TeleReach to work constantly to keep up with the Target Server's feverishly changing video screens during reboot. De-selecting the auto-sense checkbox frees TeleReach to accept and convey BIOS access keystrokes. It also helps TeleReach to quickly interpret and convey rapidly changing video screens. Be sure to re-select the checkbox when finished with BIOS access.

NOTE: Changes made to PLL Settings (Clock and Phase) will not be retained after switching away from the current Target Server. Switching Target Servers will invoke auto sensing of video, replacing manual settings for Clock and Phase with auto-sensed data. Manual setting changes to Noise Filter, Color Settings, or video auto-sensing will remain in effect from one Target Server selection to another.

Status Bar Indicators

The **Status Bar** at the bottom of the **TeleReach** window conveys information about the status of your remote connection session to TeleReach.

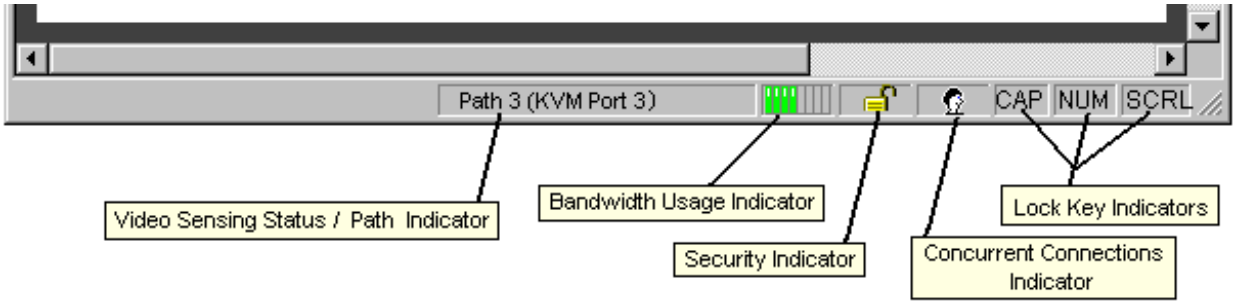


Figure 43. Important Status Indicators

1. Video Sensing Status / Path Indicator (Figure 43):

   Indicates the status of video sensing occurring. Switching between Target Servers or clicking the **Auto-sense Video** button will result in a message that reads **Auto Sensing Video (#)** at the bottom of the **Status Bar** and in the center of the **TeleReach** window. This message indicates a successful stage of auto sensing. Once video sensing in completed the message on the **Status Bar** will indicate the connected path or KVM port being utilized.

2. Bandwidth Usage Indicator (Figure 43) :

   Indicates how much of your total available bandwidth is currently being utilized. The **Connection Speed** chosen on the **Compression** tab in the **Add Connection** or **Modify Connection** window determines total available bandwidth.

3. Security Indicator (Figure 43):

   Indicates whether the current remote connection's video data transfer is protected by encryption. Encryption is set at the TeleReach Admin Console on the **Security Configuration** screen under **Encryption Mode**. When **No encryption** or **SSL Authentication, NO data encryption** is selected the **Security Indicator** is represented on the **Status Bar** as one open lock. When **SSL authentication, data encryption** or **SSL authentication, SSL encryption** is selected, the Security Indicator is represented on the Status Bar as one closed lock.

4. Concurrent Connections Indicator (Figure 43):

   Indicates if multiple remote users are currently connected to the same TeleReach path, showing one icon for a single connected user, and two icons if two or more users are connected. Concurrent connection ability can be set globally under **PC Share Mode** on the **Security Configuration** screen (Figure 56), or set by individual user under **Concurrent Access Mode** on the **User Account Settings** screen (Figure 63).

5. Lock Key Indicators (Figure 43):

   Indicates the status of the current Target Server, with respect to the activation of the Caps-Lock, Num-Lock, and Scroll-Lock keys. If these keys are enabled on the current Target Server being viewed, then this affirmative status will be reflected on the **Status Bar** as indicated in Figure 43. These indicators do not appear in the Web Client.

7. FINE-TUNE TELEREACH CONTROL SOFTWARE

Run Automatic Color Calibration

Automatic Color Calibration adjusts the Color Settings on TeleReach to reduce excess color noise and data during digitization of video images. This data streamlining will increase the operational performance of TeleReach.

Color Calibration should be run when viewing a Windows-based Target Server from a Remote PC through TeleReach. The Target Server chosen should be of a resolution that appears most often in your configuration of Target Servers, and one that most closely matches either a 800 x 600 or a 1024 x768 resolution. Since TeleReach Color Settings remain static, and do not change when switching from one Target Computer to another, running this Color Calibration routine once on a representational Target Server will benefit all connected Target Servers.

This routine replaces the manual adjustment of the Color Settings on the Video Settings tab in the **Video Settings** window (Figure 42). For more information on manual adjustment, or if all connected Target Computers are of a non Windows-based Operating System, see **Important Video Buttons** (Video Settings) in **6. Remote Operation**.

NOTE: Automatic Color Calibration should be performed after you have familiarized yourself with TeleReach remote operations in **6. Remote Operation.** Color files needed for the Target Server reside on the TeleReach Control CD-ROM. Be sure you have previously loaded the TeleReach Control software on the intended Remote PC, so that you can leave the TeleReach Control CD-ROM in the CD drive of the selected Target Server prior to departing for the location of your Remote PC. (Or you may copy the desired test file from the CD-ROM onto the Target Server).

Color Calibration Steps:

In The Server Room:

1. Choose a representational Windows-based Target Server. It should be the server that meets the following consecutive requirements:
    a) Represents the resolution - 800 x 600 or 1024 x 768 – that is the most common among all Target Servers in the KVM configuration.
    b) Has the greatest color depth.
    c) For Paragon configurations, represents an average Cat 5 cable length.
2. Insert the TeleReach Control CD-ROM into the CD drive of the chosen Target Server.
3. Access this server locally.
4. Exit the setup program, which is Auto played, by clicking <Cancel> at the **InstallShield Wizard** window, and then clicking <Yes> at the **Exit Setup** window.
5. Leave the TeleReach Control CD-ROM in the CD drive and proceed to your Remote PC.

At The Remote PC:

1. Connect to TeleReach from the Remote PC.
2. Switch to the selected representational Target Server that contains the TeleReach Control CD-ROM in its CD drive.
3. Set the background of the chosen Target Server to the color test pattern with the appropriate resolution.
    a) On the Target Server double-click My Computer > Control Panel > Display.

   b) Select Background tab and click <Browse> to open the **Browsing for wallpaper** window.
   c) In the **Browsing for wallpaper** window look in the CD-ROM drive from the pull-down menu.
   d) Double-click the Documentation folder.
   e) Two bitmap files will appear – one for 800 resolution and one for 1024 resolution.
   f) Open the bitmap file with the resolution that matches the chosen Target Server.
   g) Click <OK> and close out all remaining windows on the Target Server's desktop.
   h) If possible, remove or minimize the number of icons on the Target Server's desktop, so that as much of the color pattern as possible can be seen.
4. Ensure that screen savers or power-saving modes have been disabled on the chosen Target Server.
5. *TRC:* On the TeleReach window toolbar, select the Video pull-down menu and choose **Calibrate Color** to invoke the Automatic Color Calibration Routine.
   Web Browser: On the TeleReach toolbar, select the Color Calibration button.
6. The center of the viewing window will indicate that color calibrating is occurring. The process will take approximately 2 minutes.
7. When the Color Calibration routine is finished, return the Target Server's background to a solid, light, non-black color with no screen savers.
   a) My Computer > Control Panel > Display > Background tab > Wallpaper <none>. Click <OK>.
8. Congratulations! The Automatic Color Calibration process is complete.

NOTE: Be sure to retrieve the TeleReach Control CD-ROM from the Target Server at your earliest convenience.

NOTE: Colors of Target Computer desktops may now appear darker through the **TeleReach** window than on the Direct Analog User Console, or other analog User Consoles connected to a multi-user port KVM switch. This is normal. Although the colors are darker, the Automatic Color Calibration Routine has adjusted the Color Settings on TeleReach to reduce excess color data noise. This data streamlining will increase the operational performance of TeleReach. However, if you feel that the colors a too dark, they can be increased by accessing the Color Settings on the Video Settings tab in the **Video Settings** window (Figure 42). Keep the Link Color Controls checkbox selected and increase the Offset slides slightly.

8. LOCAL ADMINISTRATIVE FUNCTIONS

Initial Administrative Setup Procedure

If you did not perform the configuration steps documented in **3. Setup**, first follow the following directions to initialize your TeleReach system with basic settings:

1. Power ON TeleReach via power switch on back of TeleReach unit.
2. The Main Menu (Figure 44) will appear on the TeleReach Admin Console.

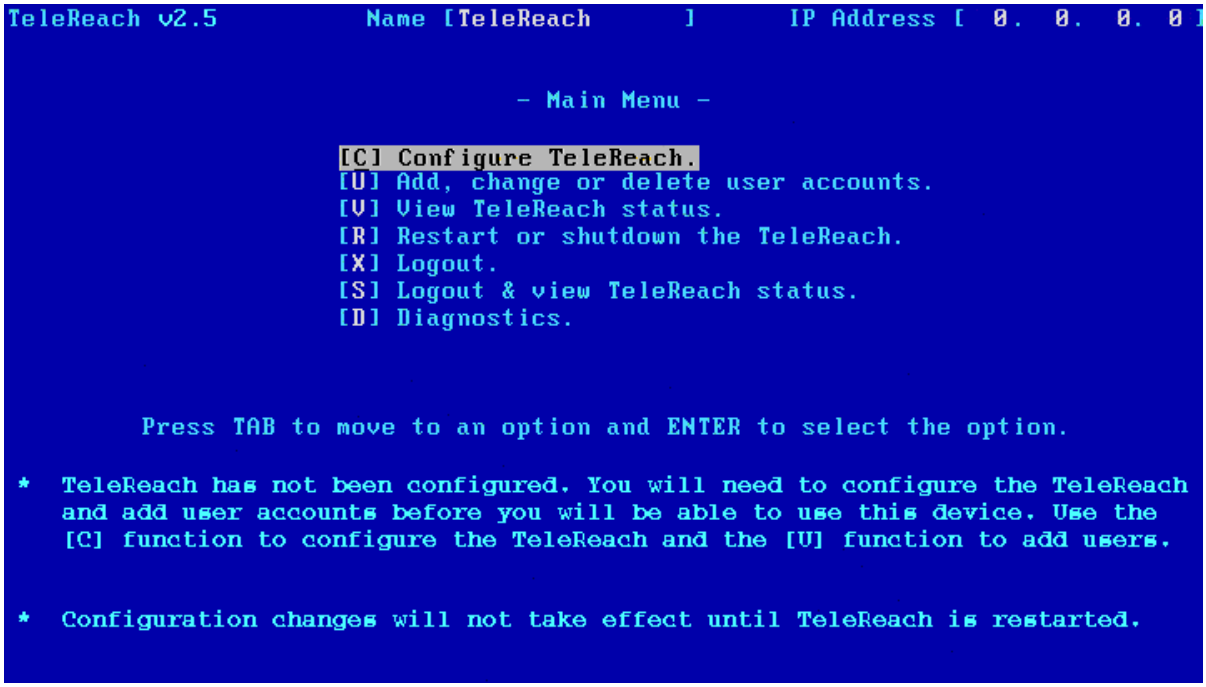

TeleReach v2.5 Name [TeleReach] IP Address [0. 0. 0. 0]
- Main Menu -
[C] Configure TeleReach.
[U] Add, change or delete user accounts.
[V] View TeleReach status.
[R] Restart or shutdown the TeleReach.
[X] Logout.
[S] Logout & view TeleReach status.
[D] Diagnostics.
Press TAB to move to an option and ENTER to select the option.
* TeleReach has not been configured. You will need to configure the TeleReach and add user accounts before you will be able to use this device. Use the [C] function to configure the TeleReach and the [U] function to add users.
* Configuration changes will not take effect until TeleReach is restarted.

Figure 44. Main Menu

3. Use the keys <Tab>, <↑>, <↓> or <C> to highlight the **Configure TeleReach** selection, then press <Enter>.
4. The **Configuration Menu** (Figure 45) will appear.

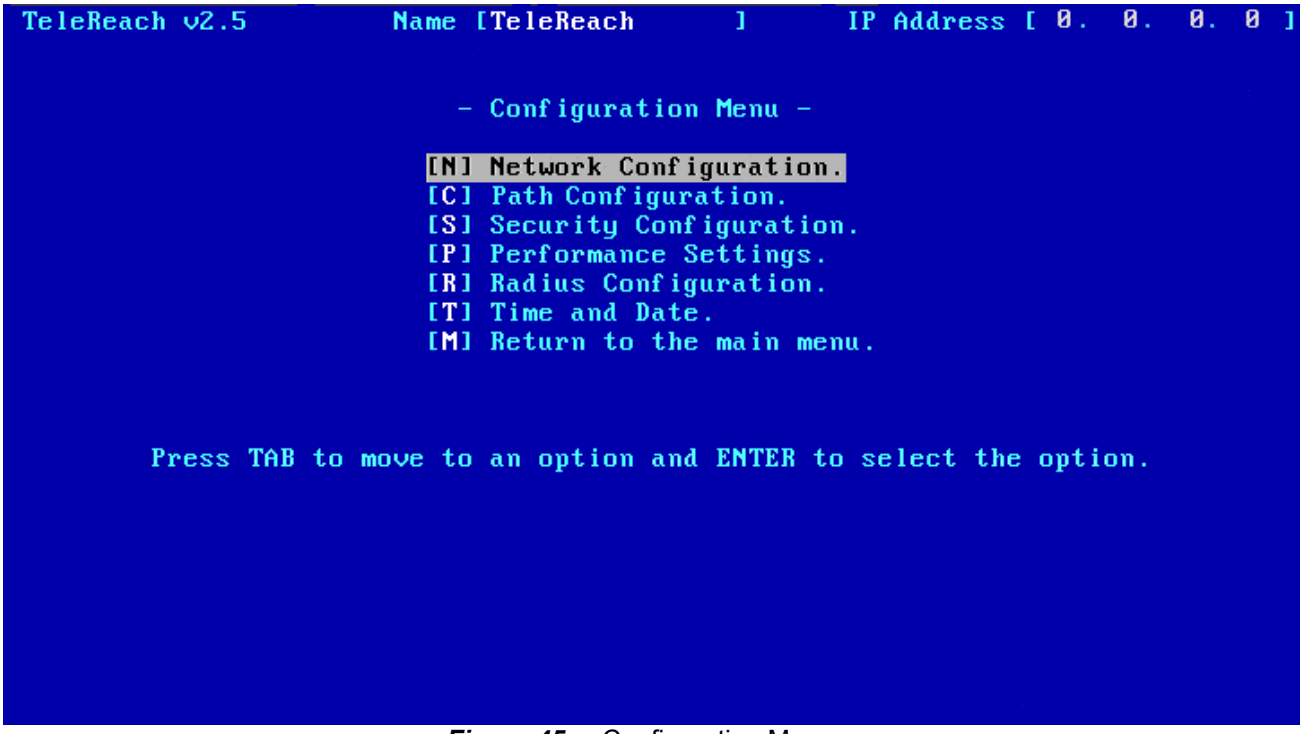

TeleReach v2.5 Name [TeleReach] IP Address [0. 0. 0. 0]
- Configuration Menu -
[N] Network Configuration.
[C] Path Configuration.
[S] Security Configuration.
[P] Performance Settings.
[R] Radius Configuration.
[T] Time and Date.
[M] Return to the main menu.
Press TAB to move to an option and ENTER to select the option.

Figure 45. Configuration Menu

5. Use the keys <Tab>, <↑>, <↓> or <N> to highlight the **Network Configuration** selection, then press <Enter>.
6. The **Network Configuration** screen (Figure 46) will appear.

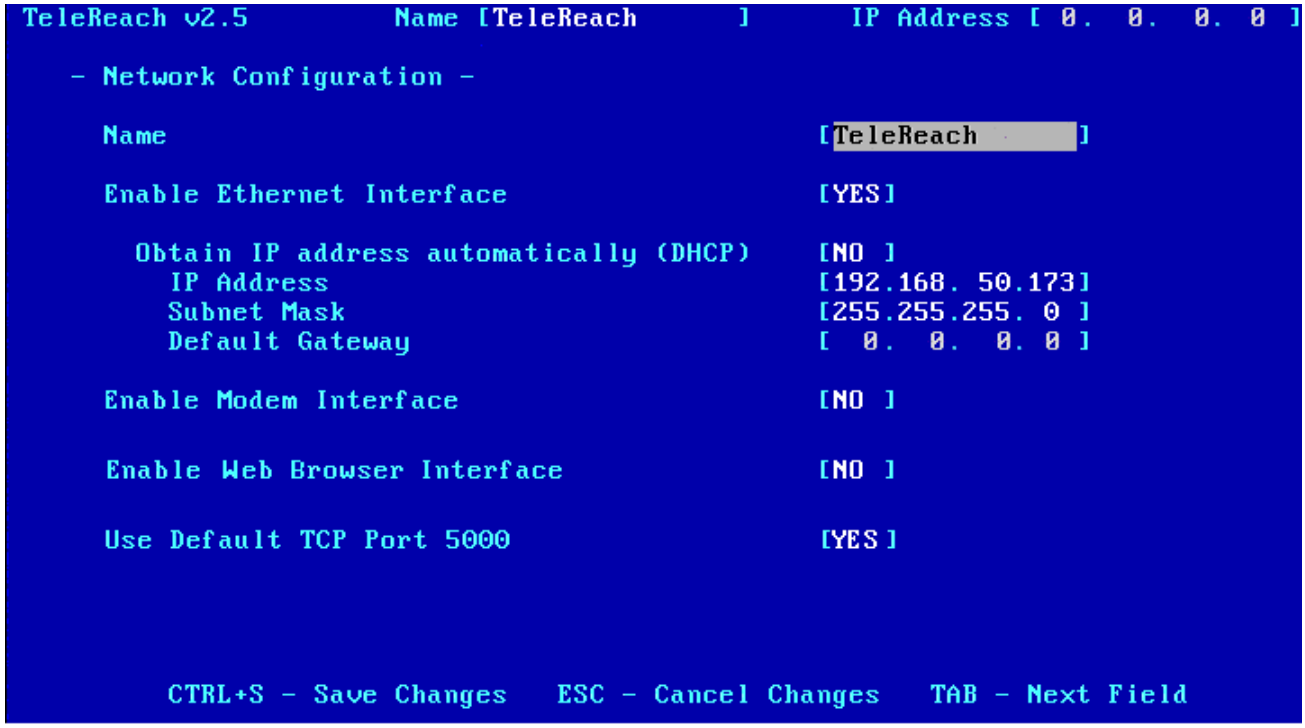

TeleReach v2.5 Name [TeleReach] IP Address [0. 0. 0. 0]
- Network Configuration -
Name [TeleReach]
Enable Ethernet Interface [YES]
Obtain IP address automatically (DHCP) [NO]
IP Address [192.168. 50.173]
Subnet Mask [255.255.255. 0]
Default Gateway [0. 0. 0. 0]
Enable Modem Interface [NO]
Enable Web Browser Interface [NO]
Use Default TCP Port 5000 [YES]
CTRL+S - Save Changes ESC - Cancel Changes TAB - Next Field

Figure 46. Network Configuration Screen

7. Consult your Network Administrator for details on network IP settings and settings for an analog telephone line.

   Use the keys <Tab>, <↑> or <↓> to select each line on the Network Configuration screen and the <space bar>, or the <←> or <→> keys to toggle between available entries. Press <Enter>, <Tab> or <↓> when your entry on each line is complete.

   a) **Name:** Type the name you wish to designate to this TeleReach unit. The default name is <TeleReach>.

   b) **Enable Ethernet Interface:** For LAN/WAN or Internet access select [YES] (default is YES).

   NOTE: Network connections must be 10BASE-T, or 100BASE-TX Ethernet

   c) **Obtain IP address automatically (DHCP):**

   - **YES:** Enables dynamic IP addressing for TeleReach. Each time TeleReach boots up it will request an IP address from the local DHCP server. This makes remote access to TeleReach by a method other than LAN difficult, since the dynamically assigned IP address must be known.
   - **NO (default):** Assigns a fixed IP address to the TeleReach unit. (Recommended) Use the <→> or <←> keys or type a period to move between fields within an IP address entry.
     - **IP Address:** Enter the IP address for TeleReach given by your Network Administrator.
     - **Subnet Mask:** Enter a Subnet Mask number provided by your Network Administrator.
     - **Default Gateway:** Enter a Default Gateway number if your Network Administrator specifies one.

   d) **Enable Modem Interface:** For Dial-up Modem access select [YES]. (the default is NO).

   e) **Enable Web Browser Interface:** For Web Browser access select [YES]. (the default is YES).

   f) **Use Default TCP Port 5000:**

   - **YES (default):** Utilizes the default port 5000.
   - **NO:** Enter an alternate port number.

   NOTE: Firewall security must enable two-way communication through default port 5000, or selected non-default port. If a non-default port is utilized, the selected port number set here must also be designated to match at the Remote PC for both a TCP/IP Connection (Figure 23a) and a Dial Up Connection (Figure 23b) - See **Configure A Connection** in **4. Prepare A Remote Connection**.

   NOTE: TR361, TR362, & TR364 models use only one TCP port — default port 5000. Prior TeleReach models (TR360-V2) require 3 open ports — default ports 5000, 5001, & 5002 as indicated.

8. Press <CTRL+S> to save changes or <ESC> to cancel changes, and return to the **Configuration Menu** (Figure 45).
9. Ensure that TeleReach is physically connected to network/analog telephone line.

   NOTE: TeleReach requires support of TCP/IP (Transmission Control Protocol/Internet Protocol) and UDP (User Datagram Protocol), both locally and at the Remote PC.

10. Select **[M] Return to main menu** and then press <Enter>.
11. On the **Main Menu** (Figure 44) select **[R] Restart or shutdown the TeleReach.** Press <Enter>.
12. Press <**R**> to restart TeleReach.
13. TeleReach will restart and the **TeleReach Initialization** screen will appear (Figure 47).
14. Press <Enter>.

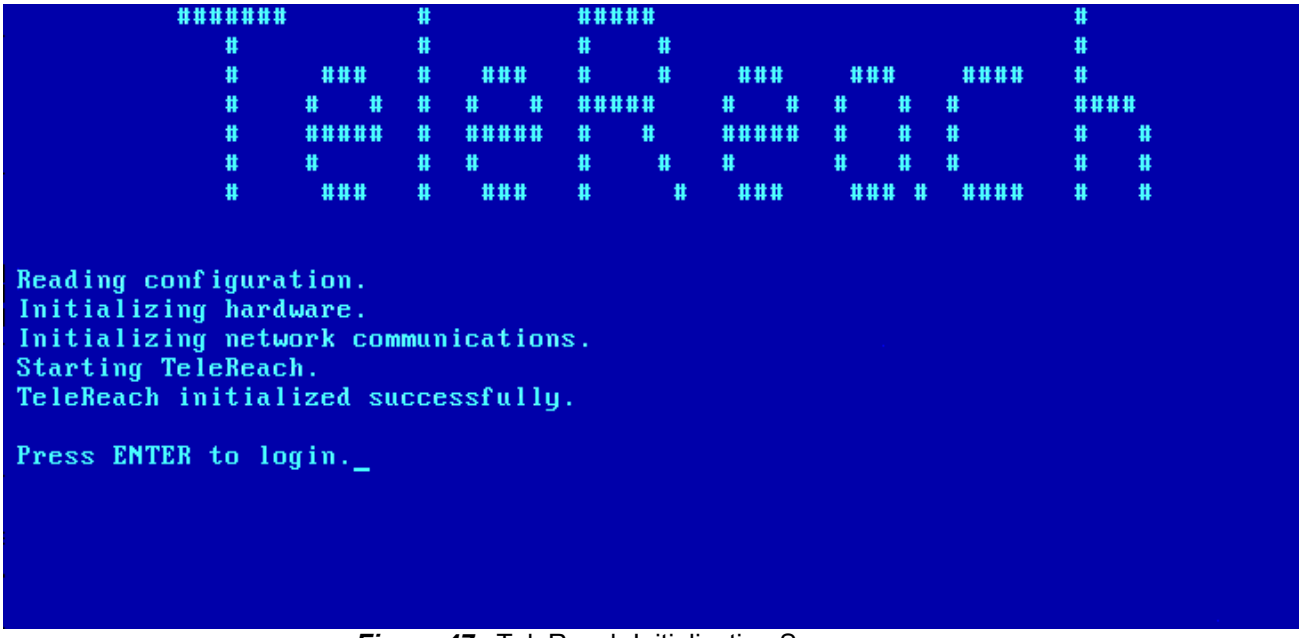


Figure 47. TeleReach Initialization Screen

15. The **Log On** screen will appear (Figure 48).

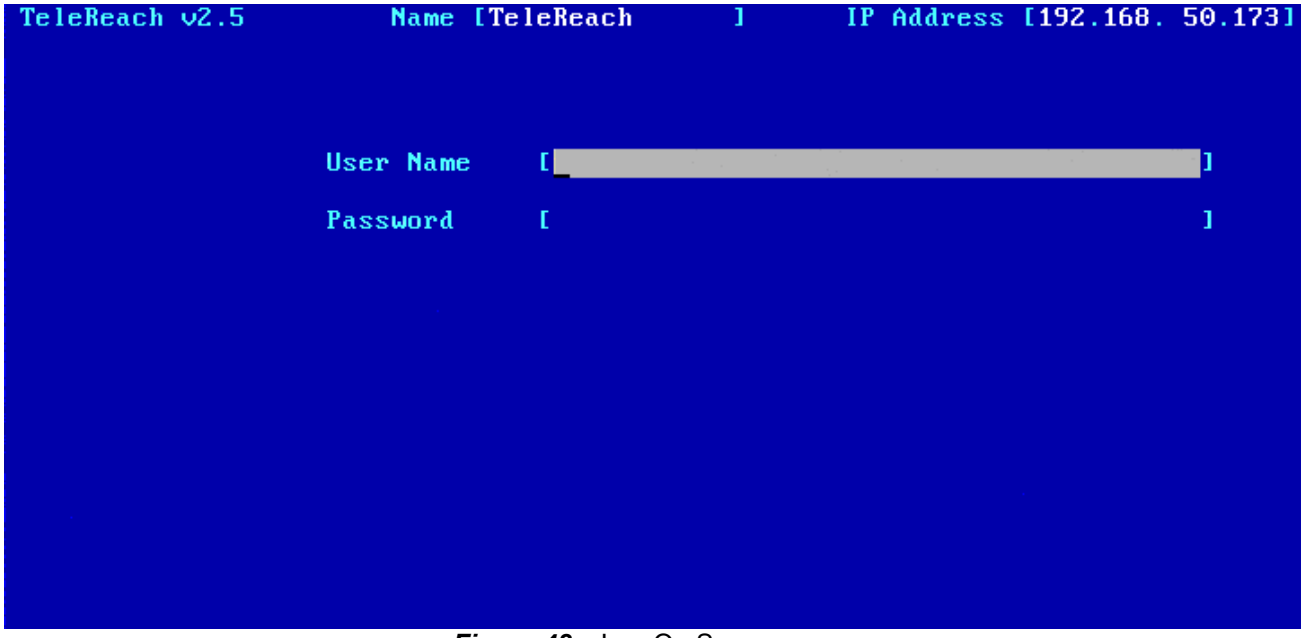


Figure 48. Log On Screen

16. Enter a User Name and Password, pressing the <Enter> key after each entry.

NOTE: Only administrators (users with administrative privileges) can log on at the TeleReach Admin Console.

TeleReach's default Log On user name is <admin> with the password <raritan>. This user has administrative privileges. **Passwords are case sensitive and must be entered in the exact case combination in which they were created. The default password <raritan> must be entered entirely in lower case letters.**

Accessing Main Menu from TeleReach Admin Console

1. Power ON TeleReach via power switch on back of TeleReach unit.
2. The **TeleReach Initialization** screen will appear (Figure 49).

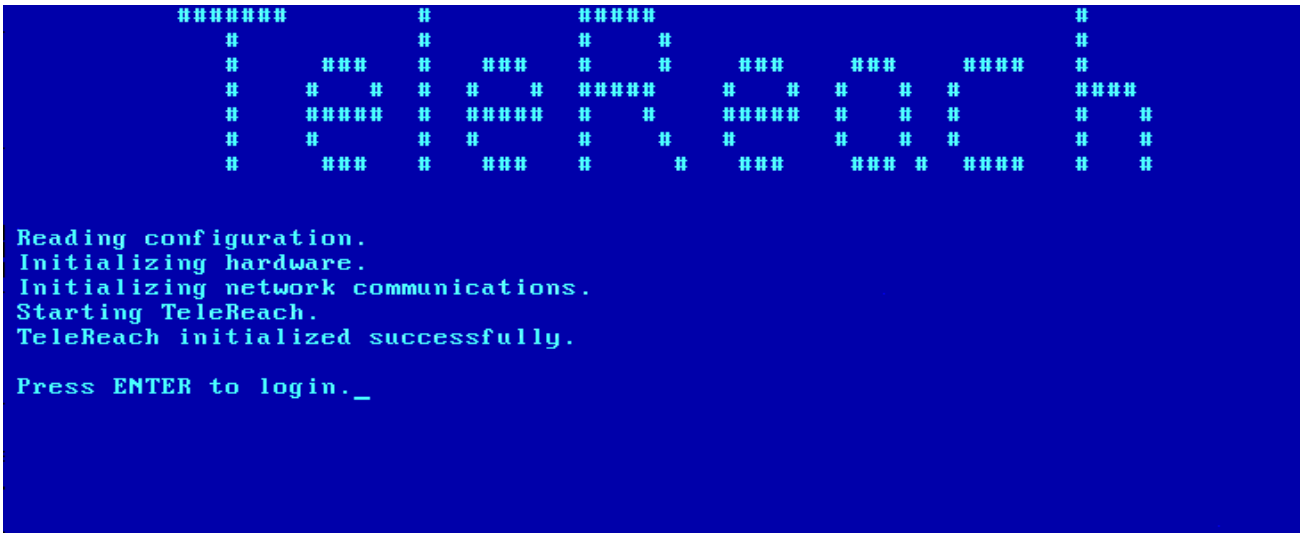


Figure 49. TeleReach Initialization Screen

3. Press <Enter>.
4. The **Log In** screen will appear (Figure 50) at the TeleReach Admin Console. Only administrators (users with administrative privileges) can log on at the TeleReach Admin Console.

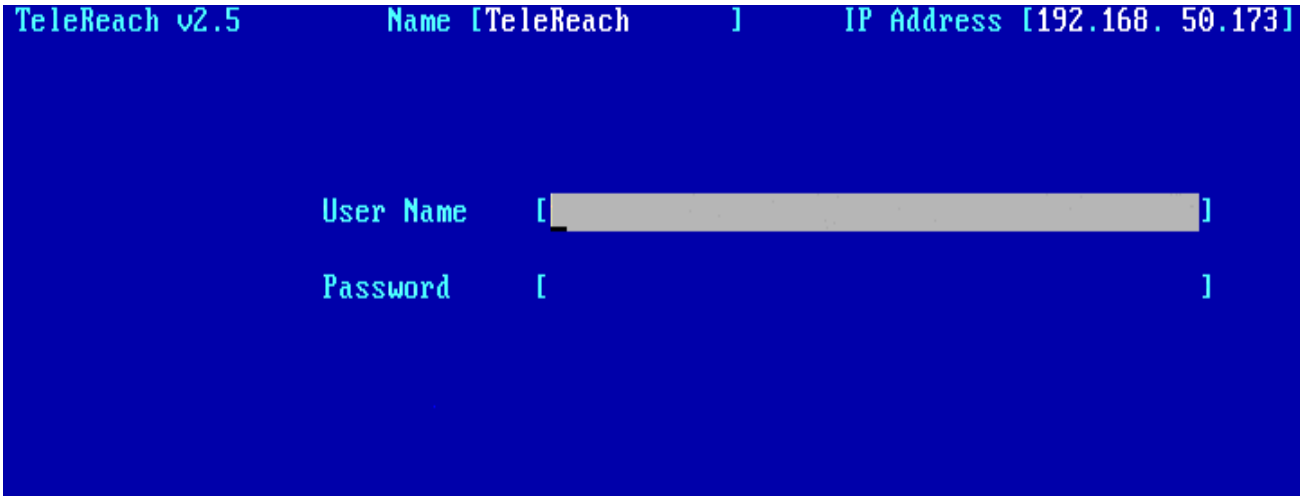


Figure 50. Log In Screen

5. Enter a User Name and Password, pressing the <Enter> key after each entry.

NOTE: For information on setting up user name and password profiles via TeleReach, see [U] Add, change, or delete user accounts and Figure 62. For utilization of RADIUS server user names and passwords, see [R] Radius Configuraiton and Figure 58.

TeleReach's default Log On user name is <admin> with the password <raritan>. This user has administrative privileges. **Passwords are case sensitive and must be entered in the exact case combination in which they were created. The default password <raritan> must be entered entirely in lower case letters.**

6. The Main Menu will appear (Figure 51).

Accessing Main Menu Remotely

An alternative way to access TeleReach's administrative functions is to do so remotely, using the TeleReach Remote Control client software or web browser access.

1. *TRC*: Double-click **TeleReach Icon** (Figure 25) found on Remote PC desktop.
   Web Browser: Open Internet Explorer and in the "Address" text box, and type in the IP address that you assigned to your TeleReach unit.
2. The **TeleReach** window or TeleReach web client (Figure 26) will appear.
3. Click the **Connect** button (Figure 27).
4. The **Connect** window (Figure 28) appears, listing all created connection profiles.
5. Click the desired connection profile to select it, and then click the <Connect> button.
6. The remote **Login** window (Figure 29) will appear. Enter your user name and password.
7. When the connection has been established,

   TRC: Choose Tools > Admin Console in the menu bar.
   Web Browser: Click on the Administration Console button in the TeleReach toolbar (see Appendix A).

Main Menu

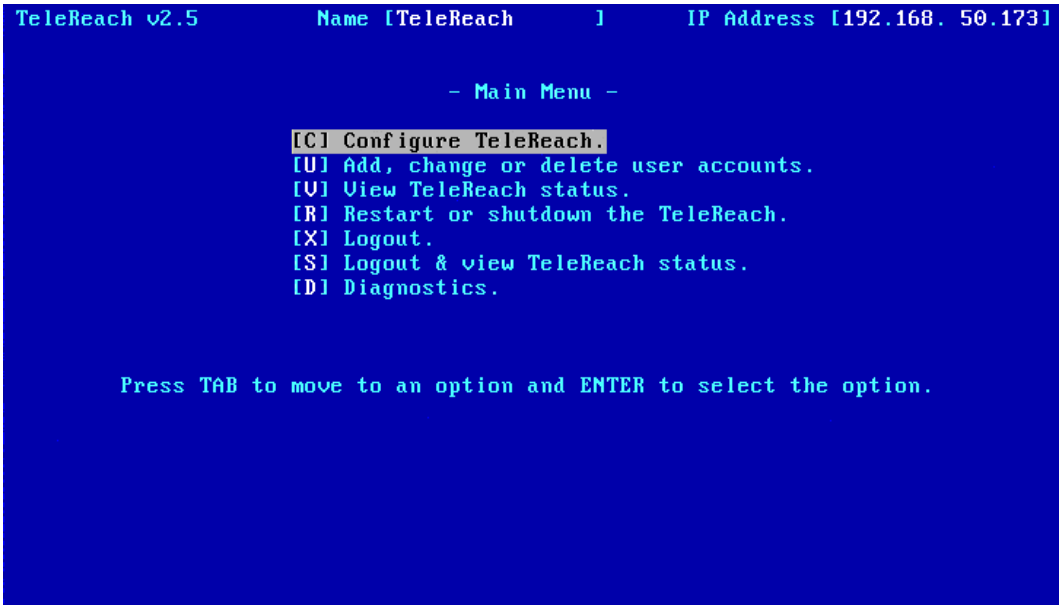

TeleReach v2.5 Name [TeleReach] IP Address [192.168. 50.173]
- Main Menu -
[C] Configure TeleReach.
[U] Add, change or delete user accounts.
[V] View TeleReach status.
[R] Restart or shutdown the TeleReach.
[X] Logout.
[S] Logout & view TeleReach status.
[D] Diagnostics.
Press TAB to move to an option and ENTER to select the option.

Figure 51. *Main Menu*

A wide variety of functions can be performed from the Main Menu. Use the keys <Tab>, <↑>, or <↓> to highlight the desired selection, or enter the desired letter, then press <Enter>.

[C] Configure TeleReach

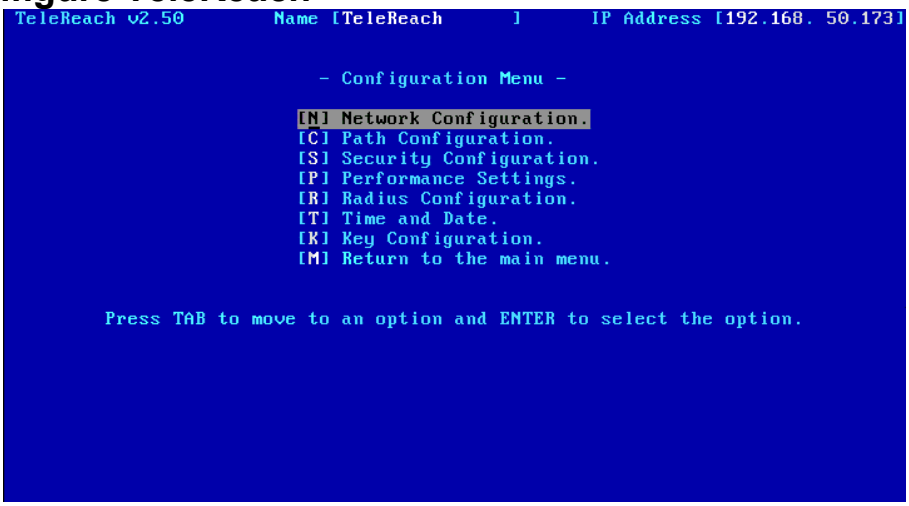

TeleReach v2.50 Name [TeleReach] IP Address [192.168. 50.173]
- Configuration Menu -
[N] Network Configuration.
[C] Path Configuration.
[S] Security Configuration.
[P] Performance Settings.
[R] Radius Configuration.
[T] Time and Date.
[K] Key Configuration.
[M] Return to the main menu.
Press TAB to move to an option and ENTER to select the option.

Figure 52. Configuration Menu

Use the keys <Tab>, <↑>, or <↓> to highlight the desired selection, or enter the desired letter, then press <Enter>.

[N] Network Configuration

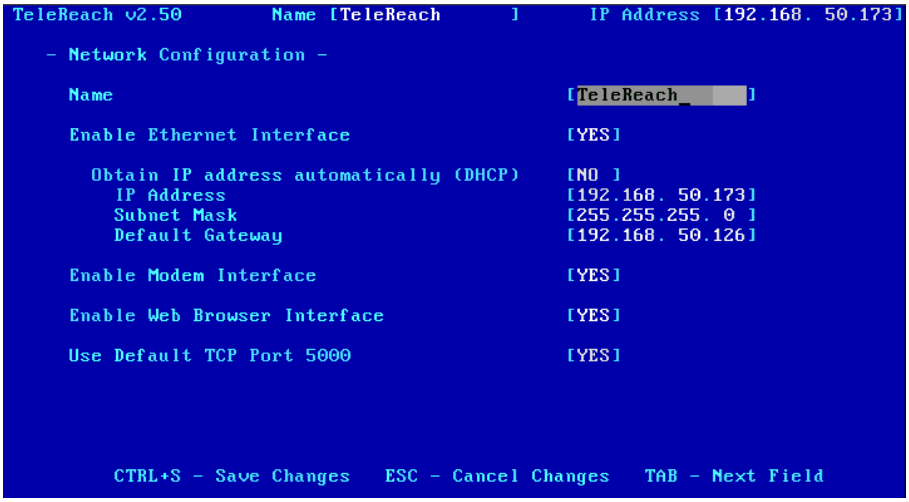

TeleReach v2.50 Name [TeleReach] IP Address [192.168. 50.173]
- Network Configuration -
Name [TeleReach]
Enable Ethernet Interface [YES]
Obtain IP address automatically (DHCP) [NO]
IP Address [192.168. 50.173]
Subnet Mask [255.255.255. 0]
Default Gateway [192.168. 50.126]
Enable Modem Interface [YES]
Enable Web Browser Interface [YES]
Use Default TCP Port 5000 [YES]
CTRL+S - Save Changes ESC - Cancel Changes TAB - Next Field

Figure 53. Network Configuration Screen

The **Network Configuration** screen (Figure 53) is used to setup TeleReach for initial installation to a network or analog telephone line. The steps to install TeleReach through this Network Configuration screen are listed in part **3. Setup**.

Use the keys <Tab>, <↑> or <↓> to select each line on the Network Configuration screen and the <space bar>, or the <←> or <→> keys to toggle between available entries. Press <Enter>, <Tab> or <↓> when your entry on each line is complete. Press <CTRL+S> to save changes or <ESC> to cancel changes, and return to the **Configuration Menu** (Figure 52).

a) **Name:** Type the name you wish to designate to this TeleReach unit. The default name is <TeleReach>.

b) **Enable Ethernet Interface:** For LAN/WAN or Internet access select [YES] (default is YES).

NOTE: Network connections must be 10BASE-T, or 100BASE-TX Ethernet

c) **Obtain IP address automatically (DHCP):**

- **YES:** Enables dynamic IP addressing for TeleReach. Each time TeleReach boots up it will request an IP address from the local DHCP server.
- **NO (default):** Assigns a fixed IP address to the TeleReach unit. (Recommended) Use the <→> or <←> keys or type a period to move between fields within an IP address entry.
  - **IP Address:** Enter the IP address for TeleReach given by your Network Administrator.
  - **Subnet Mask:** Enter a Subnet Mask number provided by your Network Administrator.
  - **Default Gateway:** Enter a Default Gateway number if your Network Administrator specifies one.

d) **Enable Modem Interface:** For Dial-up Modem access select [YES]. (the default is NO).

e) **Enable Web Browser Interface:** For Web Browser access select [YES]. (the default is YES).

f) **Use Default TCP Port 5000:**

- **YES (default):** Utilizes the default port 5000.
- **NO:** Enter an alternate port number.

NOTE: Firewall security must enable two-way communication through default port 5000, or selected non-default port. If non-default port is utilized, the selected port number set here must also be designated to match at the Remote PC for both a TCP/IP Connection (Figure 22a) and a Dial Up Connection (Figure 22b) - See **Configure A Connection** in **4. Prepare A Remote Connection**.

NOTE: TR361, TR362, & TR364 models use only one TCP port — default port 5000. Prior TeleReach models (TR360-V2) require 3 open ports — default ports 5000, 5001, & 5002 as indicated.

[C] Path Configuration

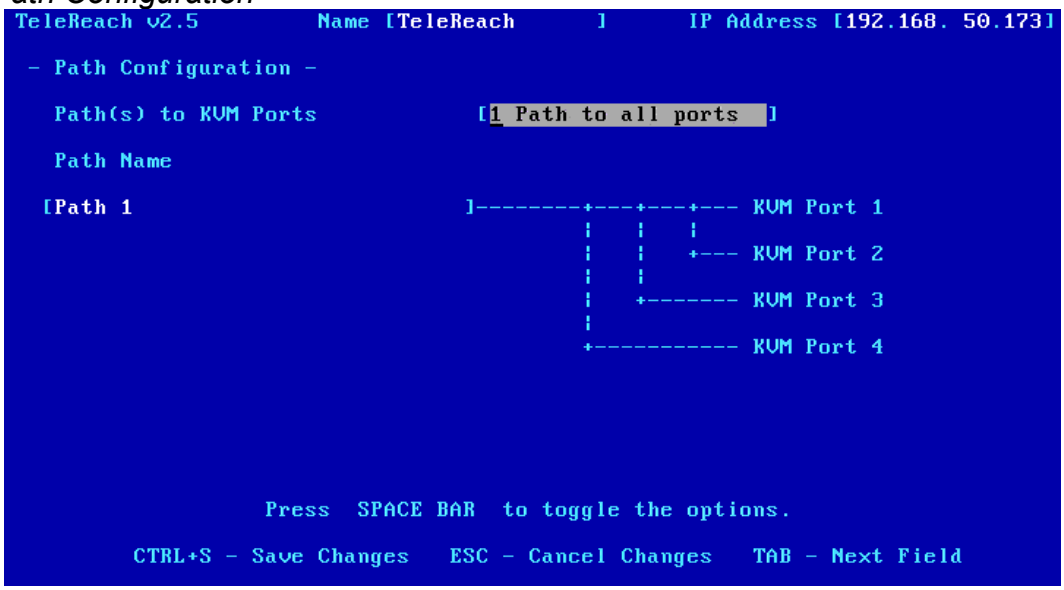

TeleReach v2.5 Name [TeleReach] IP Address [192.168. 50.173]
- Path Configuration -
Path(s) to KVM Ports [1 Path to all ports]
Path Name
[Path 1
KVM Port 1
KVM Port 2
KVM Port 3
KVM Port 4
Press SPACE BAR to toggle the options.
CTRL+S - Save Changes ESC - Cancel Changes TAB - Next Field

Figure 54a. Path Configuration Screen —— 1 Path to all ports

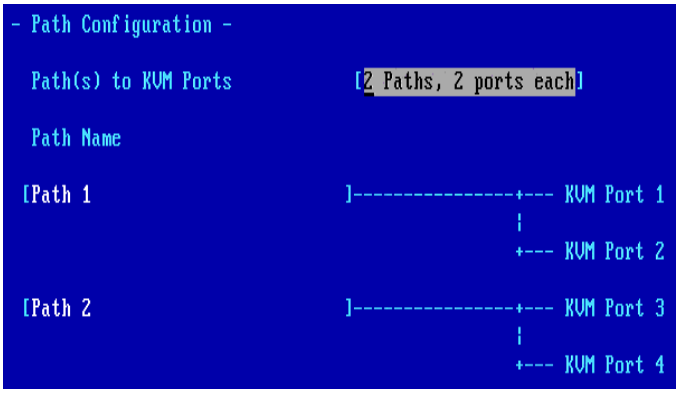


Figure 54b. 2 Paths — 2 ports each

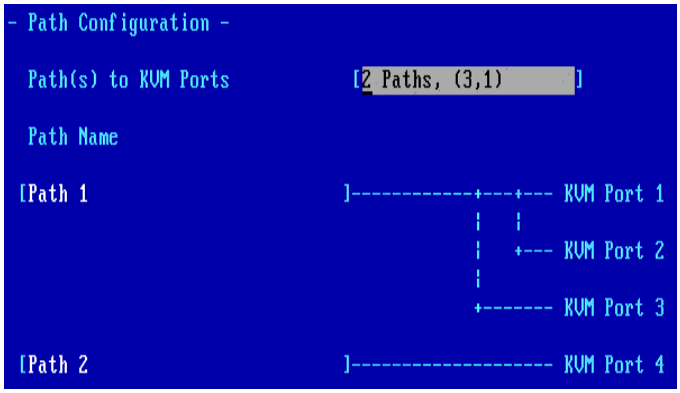


Figure 55c. 2 Paths — 3 ports & 1 port

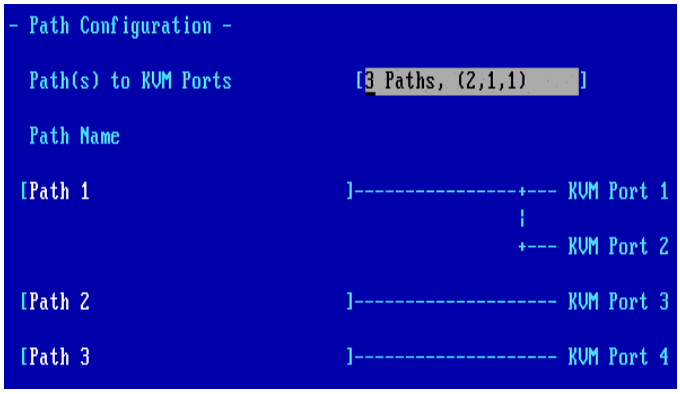


Figure 55d. 3 Paths — 2 ports, 1 port, & 1port

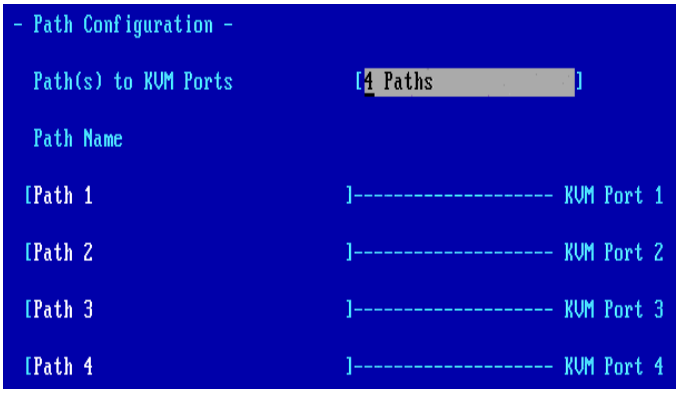


Figure 55e. 4 Paths — 1port for each path

The Path Configuration screen(s) (Figure 55a to 55e) are used to setup TeleReach path(s). With a TeleReach 364 unit, up to 4 paths are available. Administrator's can toggle through the Path Configuration screen(s) to map path(s) to KVM Port(s).

1. Use the <←> or <→> keys to toggle between available entries for Path(s) to KVM Ports**:**

   a) **1 Path to all ports:** Used when ALL TeleReach KVM Ports are connected to one KVM switch configuration. There is one main path to one KVM configuration and up to 4 users can connect to the KVM configuration.

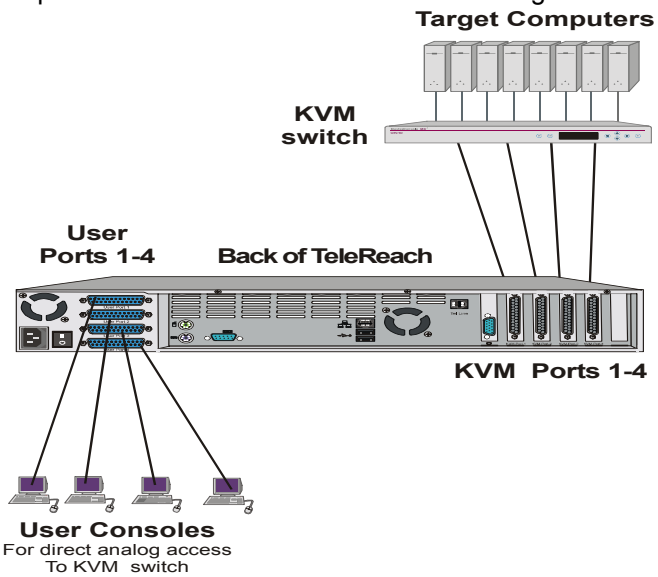
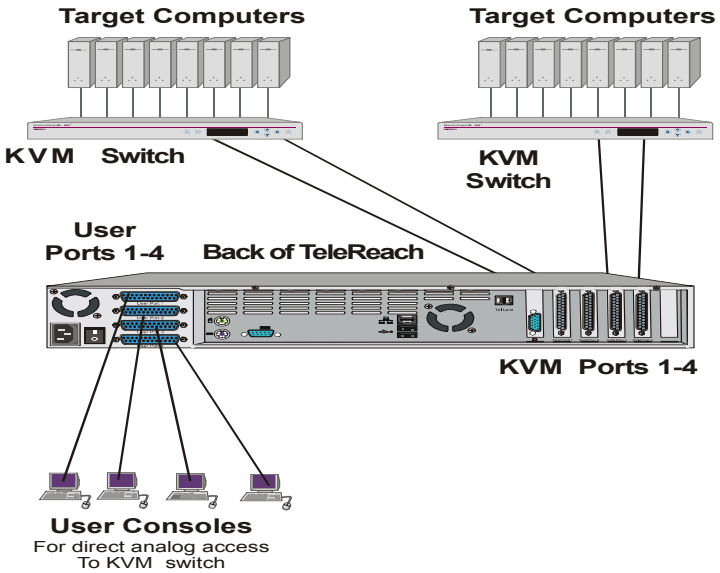


Figure 55a. 1 Paths to all ports

TeleReach will automatically assign the next open channel on the path to each user.

b) **2 Paths, 2 ports each:** Used when TeleReach is connected to two KVM switch configurations. There are two main paths, one to each KVM configuration.

Figure 55b. 2 Paths — 2 ports each



The user must select the Path (or KVM configuration) to which they wish to connect at TeleReach login. Up to 2 users can connected to each KVM configuration. TeleReach will automatically assign the next open channel on the selected path to each user.

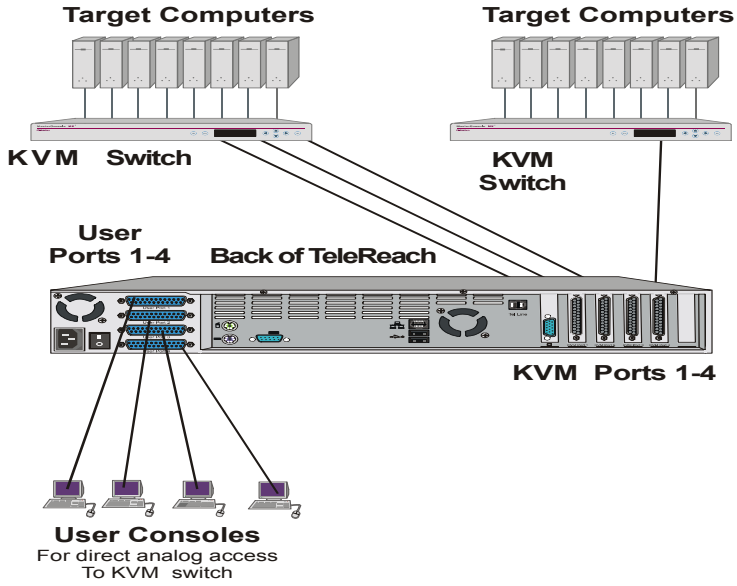


Figure 55c. 2 Paths — 3 ports & 1 port

c) 2 Paths, (3,1): The user must select the Path (or KVM configuration) to which they wish to connect at TeleReach login. Up to 3 users can connect to the first Path (KVM configuration) and TeleReach will automatically assign the next open channel on the selected path to each user. Only 1 user can connect to the second Path (KVM configuration).

d) 3 Paths, (2, 1, 1): Used when TeleReach is connected to three KVM switch configurations. There are three main paths, one to each KVM configuration.

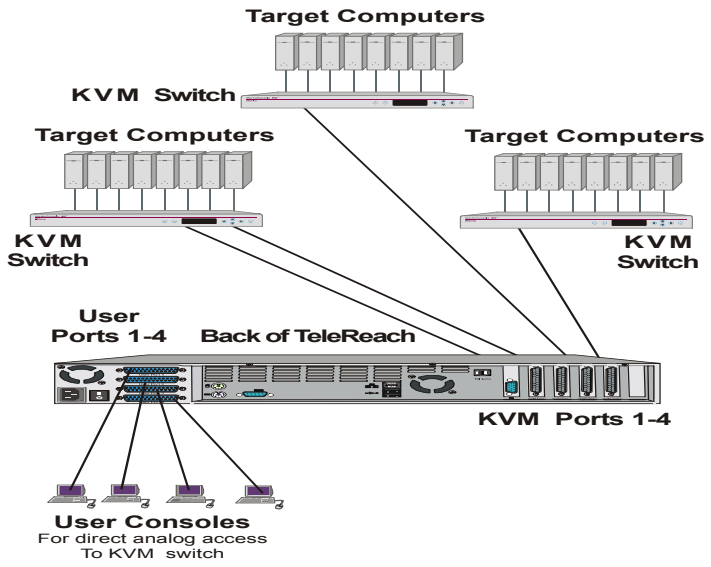


Figure 55d. 3 Paths — 2 ports, 1 port, & 1port

The user must select the Path (or KVM configuration) to which they wish to connect at TeleReach login. Up to 2 users can connect to the first Path (KVM configuration) and TeleReach will automatically assign the next open channel on the selected path to each user. Only 1 user can connect to each of the remaining Paths (KVM configurations).

e) 4 Paths: Used when TeleReach is connected to four KVM configurations or 4 individual servers. There are four main paths, one to each KVM configuration or server.

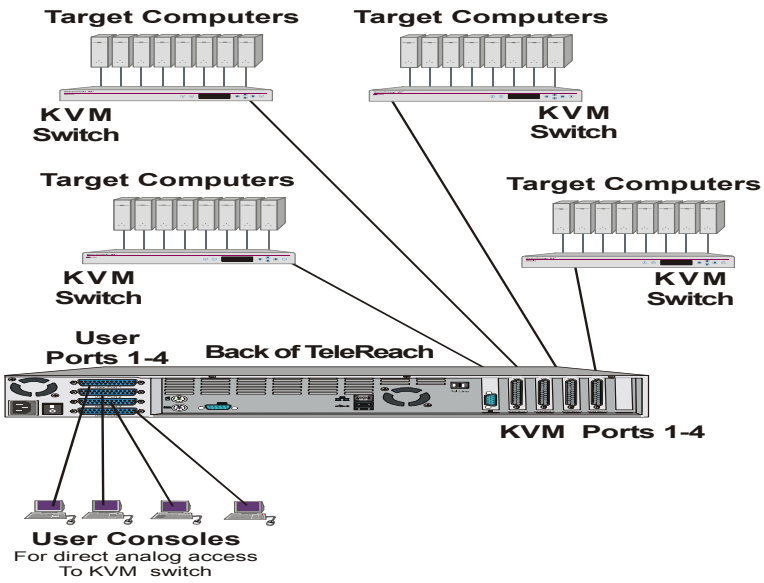


Figure 55e. 4 Paths — 1port for each path

The user must select the Path (or KVM configuration) to which they wish to connect at TeleReach login. Only 1 user can connect to each Path (KVM configuration).

2. Use the keys <Tab>, <↑> or <↓> to move into the Path Name field and enter a name for each path (KVM configuration).

a. Backspace over the default path name.

b. Enter a new name for the path and press <Enter>.

c. Repeat for each path to be named.

Press <CTRL+S> to save changes or <ESC> to cancel changes, and return to the Configuration Menu (Figure 52). Saved Configuration changes will not take effect until TeleReach is restarted.

[S] Security Configuration

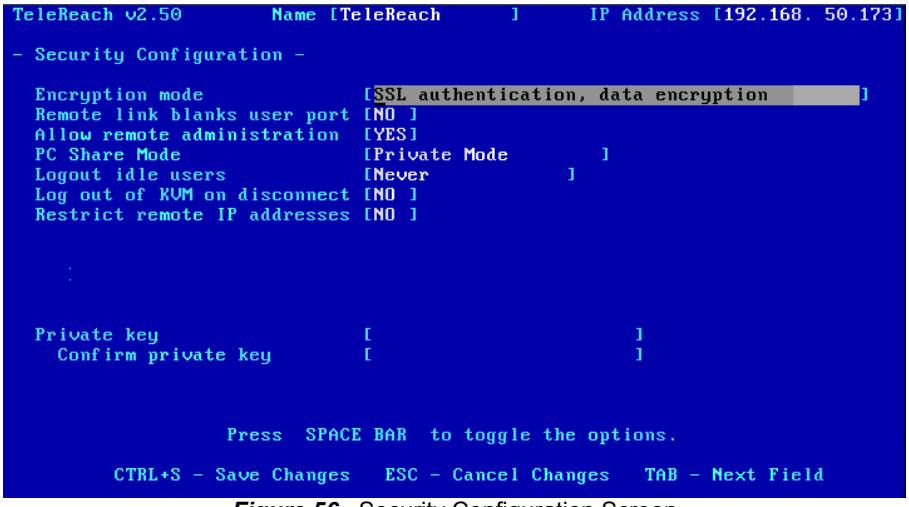

TeleReach v2.50 Name [TeleReach] IP Address [192.168. 50.173]
- Security Configuration -
Encryption mode [SSL authentication, data encryption]
Remote link blanks user port [NO]
Allow remote administration [YES]
PC Share Mode [Private Mode]
Logout idle users [Never]
Log out of KVM on disconnect [NO]
Restrict remote IP addresses [NO]
Private key [ ]
Confirm private key [ ]
Press SPACE BAR to toggle the options.
CTRL+S - Save Changes ESC - Cancel Changes TAB - Next Field

Figure 56. Security Configuration Screen

The Security Configuration screen (Figure 56) is used to setup TeleReach security options.

Use the keys <Tab>, <↑> or <↓> to select each line on the Security Configuration screen and the <space bar>, or the <←> or <→> keys to toggle between available entries. Press <Enter>, <Tab> or <↓> when your entry on each line is complete.

- **Encryption mode:** Toggle through the choices and select the desired level of encryption for initial connection authentication and remote session video data transfer.
  - **No encryption:** No encryption or security. Neither the initial connection authentication, nor remote video data transfer are encrypted.
  - **SSL authentication, NO data encryption:** This mode secures user names and passwords, but not KVM data. 128-bit Secure Sockets Layer (SSL) protocol provides a private communications channel between TeleReach and the Remote PC during initial connection authentication. No encryption security in place during remote KVM data transfer.
  - **SSL authentication, data encryption (default):** This mode secures user names and passwords, and KVM data. 128-bit Secure Sockets Layer (SSL) protocol provides a private communications channel between TeleReach and the Remote PC during initial connection authentication. After authentication, KVM data is also transferred with 128-bit encryption, but using a proprietary protocol more efficient than SSL.
  - **SSL authentication, SSL data encryption:** This mode secures user names and passwords, and provides high-level security for KVM data. 128-bit Secure Sockets Layer (SSL) protocol provides a private communications channel between TeleReach

and the Remote PC during initial connection authentication. 128-bit Secure Socket Layer (SSL) encryption is also in place during remote KVM data transfer.

NOTE: SSL data encryption increases the amount of data that must be sent over the remote connection, and is, therefore, not recommended for modem or very slow Internet connections. The default setting, "SSL authentication, data encryption" offers exactly the same level of security, at a higher level of efficiency.

- **Remote link blanks user port:** Determines whether Direct Analog User port will be blanked out locally when a remote user is accessing the corresponding KVM port. This keeps a local user from seeing what the remote user is doing.

NOTE: User Consoles can be attached to User Ports 1 through 4. Each User Console will view the path of the matching KVM Port. For example, the User Console attached to User Port 1 will view the KVM path attached to KVM Port 1. Similarly, the User Console attached to User Port 2 will view the KVM path attached to KVM Port 2, and so on.

  - **NO (default):** User port can be viewed locally during remote user access.
  - **YES:** User port cannot be viewed locally during remote user access. The local or Direct Analog user console will stop displaying video.

- **Allow remote administration:**
  - **NO**: To keep access to all Administrative Functions available only from the TeleReach Admin Console, and not from a Remote PC.
  - **YES (default):** Allows remote access to all Administrative TeleReach Functions by administrators logged on at a Remote PC. See 9. Remote Administration.

- **PC Share Mode:** Determines global concurrent remote access. Enables up to 8 remote users to simultaneously log on to one TeleReach unit and concurrently view and control a Target Server through TeleReach. Control is based on first active/keyboard mouse input, so multiple remote users attempting keyboard input or mouse movement at exactly the same moment may experience uneven control.
  - **Private Mode (default):** No PC Share. Each TeleReach path can be accessed exclusively by only one user at a time.
  - **PC Share Mode:** TeleReach can be accessed by more than one user (administrator or non-administrator) at a time. Control is based on first active keyboard/mouse input, so multiple remote users attempting keyboard input or mouse movement at exactly the same moment may experience uneven control.
  - **PC Share Admins Only:** TeleReach can be accessed by more than one user (administrative users only) at a time. Control is based on first active keyboard/mouse input, so multiple remote users attempting keyboard input or mouse movement at exactly the same moment may experience uneven control.

NOTE: PC Share Mode is a global setting. For individual user access settings see Keyboard and Mouse Control and Concurrent Access Mode on the User Account Settings screen (Figure 63). Each user profile can be individually set to enable/disable keyboard and mouse control, and concurrent access.

- **Logout idle users**: Offers an option for TeleReach to automatically disconnect remote users after certain selected time intervals of inactivity have passed.
  - **Never (default):** Idle remote users will never be disconnected.
  - **After 5, 15, 30, 60, or 120 minutes:** Idle remote users will be automatically disconnected from TeleReach after the selected time period has passed with no active input from the Remote PC.

- **Log out of KVM on disconnect**: Sets automatic log out from connected KVM's OSD.

- **NO (default):** No special commands will be given to effect to the OSD of the connected KVM switch upon user remote disconnection from TeleReach. When a remote user disconnects from TeleReach the OSD of the connected KVM switch will remain in the state last seen by the user.
- **YES:** When a remote user disconnects from TeleReach, then TeleReach will automatically send a log out <F9> command to the connected KVM switch.

NOTE: For concurrent connections, the Log out command, if set, will be sent when the last connected user logs off from TeleReach.

NOTE: For log out of KVM option to function properly, TeleReach must be configured to match the base KVM switch's hot key – see Switching Between Target Servers With A Raritan KVM Switch in 6. Remote Operation.

- **Restrict remote IP address:** Determines which remote IP address locations will be granted access to TeleReach.
  - **NO (default):** Remote access to TeleReach is unrestricted.
  - **YES:** TeleReach will grant remote access to up to 4 designated IP addresses or address levels. That means Administrators can set TeleReach to only accept requests from the company's intranet and/or from just a few outside IP addresses. The IP Mask fields determine what remote IP addresses TeleReach will grant remote access to.

NOTE: Once Restrict remote IP address has been enabled, an entry must be made in at least one of the IP Mask fields, since 0.0.0.0 is an invalid IP address.

    - A specific IP Mask instructs TeleReach to grant remote access to only this specific remote IP address. For example, a mask of 10.0.0.1 instructs TeleReach to grant remote access from the remote IP address location 10.0.0.1 only.
    - The value 255 acts as a wildcard in any location of the IP mask address. For example, a mask of 10.0.0.255 instructs TeleReach to grant remote access from any remote IP address location within the range 10.0.0.0 to 10.0.0.255. Similarly, a mask of 192.255.255.255 instructs TeleReach to grant remote access from any remote IP address location beginning with 192.

- **Private key:** Enter a private key password. This private key acts as a second level of password protection. Only remote users that know the private key password, in addition to their user name and password, can log in and connect to TeleReach.
  - **Confirm private key:** Enter private key password again for re-confirmation.

NOTE: Private key passwords are case sensitive. For remote user log in, they must be entered by the user in the exact case combination in which they were created here.

Press <CTRL+S> to save changes or <ESC> to cancel changes, and return to the Configuration Menu (Figure 52). Saved Configuration changes will not take effect until TeleReach is restarted.

[P] Performance Settings

The Performance Settings screen (Figure 57) is used to setup TeleReach's video data transfer and bandwidth parameters.

Use the keys <Tab>, <↑> or <↓> to select each line on the Performance Settings screen and the <space bar>, or the <←> or <→> keys to toggle between available entries. Press <Enter>, <Tab> or <↓> when your entry on each line is complete.

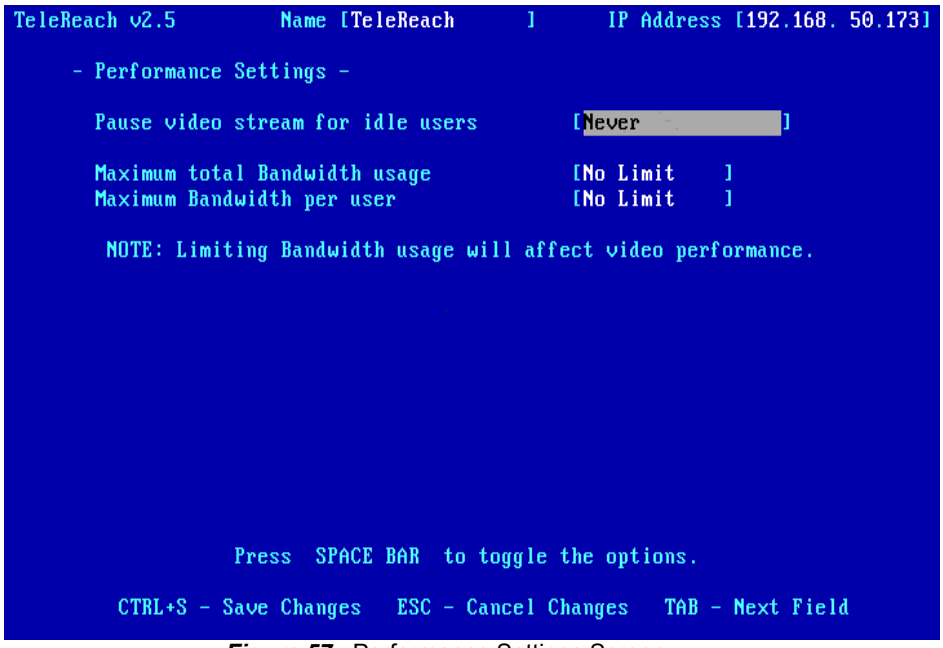

TeleReach v2.5 Name [TeleReach] IP Address [192.168. 50.173]
- Performance Settings -
Pause video stream for idle users [Never]
Maximum total Bandwidth usage [No Limit]
Maximum Bandwidth per user [No Limit]
NOTE: Limiting Bandwidth usage will affect video performance.
Press SPACE BAR to toggle the options.
CTRL+S - Save Changes ESC - Cancel Changes TAB - Next Field

Figure 57. Performance Settings Screen

- **Pause video stream for idle users:** Pausing the flow of video data during periods of prolonged inactivity will prevent an inactive user from needlessly consuming bandwidth.
    - **Never (default):** Video data will continually be sent to Remote PC, constantly updating the screen, even if the remote user is Idle, sending no active input to TeleReach.
    - **After 5, 15, 30, 60, or 120 minutes:** Video data flow to the Remote PC will pause after the selected time period has passed with no active input from the Remote PC.
- **Maximum total Bandwidth usage:** Sets an upper limit to the amount of bandwidth that can be consumed by this one TeleReach unit.
    - **No Limit (default):** TeleReach can consume as much bandwidth as needed.
    - **10, 5, 2, or 1 megabit or 512, 256, 128 kilobit**: Total bandwidth available to be consumed by this TeleReach unit is limited to the selected quantity. The lower the bandwidth allowed, the slower the performance that may result.
- **Maximum Bandwidth per user**: Sets an upper limit to the amount of bandwidth that can be consumed by each user logged onto this one TeleReach unit.

NOTE: The availability of concurrent remote access is determined by the global setting PC Share Mode on the Security Configuration screen (Figure 56) or individually by user profile through the Keyboard and Mouse Control and Concurrent Access Mode settings on the User Account Settings screen (Figure 63). Control of TeleReach and a connected Target Server is based on first active keyboard/mouse input, so multiple remote users attempting keyboard input or mouse movement at exactly the same moment may experience uneven control.

- **No Limit (default):** Each active user can consume as much bandwidth as needed.
- **10, 5, 2, or 1 megabit or 512, 256, 128 kilobit:** Bandwidth consumed by each active user during the operation of this TeleReach unit is limited to the selected quantity. The lower the bandwidth allowed, the slower the performance that may result.

Press <CTRL+S> to save changes or <ESC> to cancel changes, and return to Configuration Menu (Figure 52). Saved Performance Settings changes will not take effect until TeleReach is restarted.

[R] Radius Configuration

The Radius Configuration screen (Figure 58) is used to setup TeleReach for use with a RADIUS protocol server. RADIUS protocol is an Internet standard that provides user authentication, authorization, and accounting services for remote access devices. TeleReach can be configured as a RADIUS client. TeleReach will query the RADIUS server for authentication and authorization information each time a user attempts to login to TeleReach. TeleReach can also send information, about when each user logged in or out, to the RADIUS accounting server.

Use the keys <Tab>, <↑> or <↓> to select each line on the Radius Configuration screen and the <space bar>, or the <←> or <→> keys to toggle between available entries. Press <Enter>, <Tab> or <↓> when your entry on each line is complete.

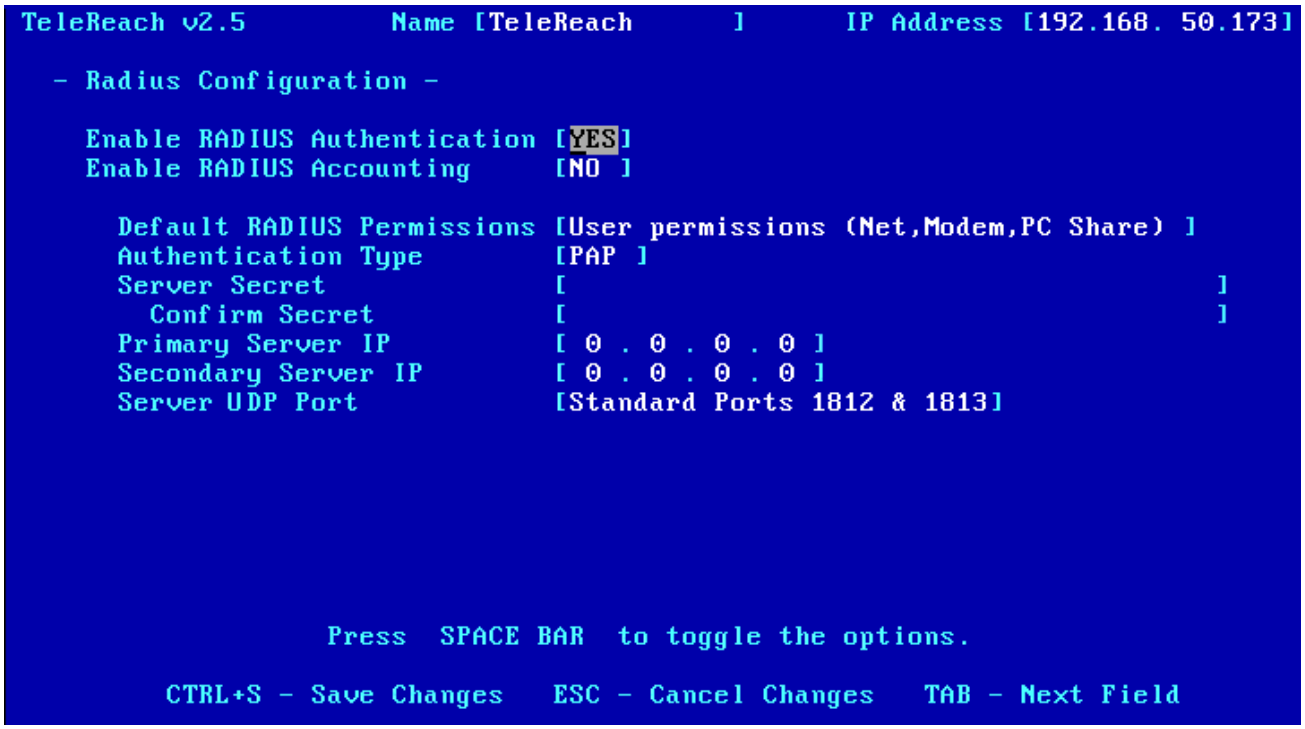

TeleReach v2.5 Name [TeleReach] IP Address [192.168. 50.173]
- Radius Configuration -
Enable RADIUS Authentication [YES]
Enable RADIUS Accounting [NO]
Default RADIUS Permissions [User permissions (Net,Modem,PC Share)]
Authentication Type [PAP]
Server Secret [ ]
Confirm Secret [ ]
Primary Server IP [0 . 0 . 0 . 0]
Secondary Server IP [0 . 0 . 0 . 0]
Server UDP Port [Standard Ports 1812 & 1813]
Press SPACE BAR to toggle the options.
CTRL+S - Save Changes ESC - Cancel Changes TAB - Next Field

Figure 58. Radius Configuration Screen

- **Enable RADIUS Authentication:** Turns the RADIUS authentication function on or off.
  - **NO (default):** RADIUS authentication is not operational. At a user login attempt, TeleReach will refer to the TeleReach database of user name and password profiles that has been entered and built by the system administrator – see Figure 62. User Account Settings Screen
  - **YES:** RADIUS authentication is operational. At a user login attempt, TeleReach will refer to the RADIUS server's user name and password database, provided there is

not an exact matching user name and password in the TeleReach database of profiles (Figure 59).

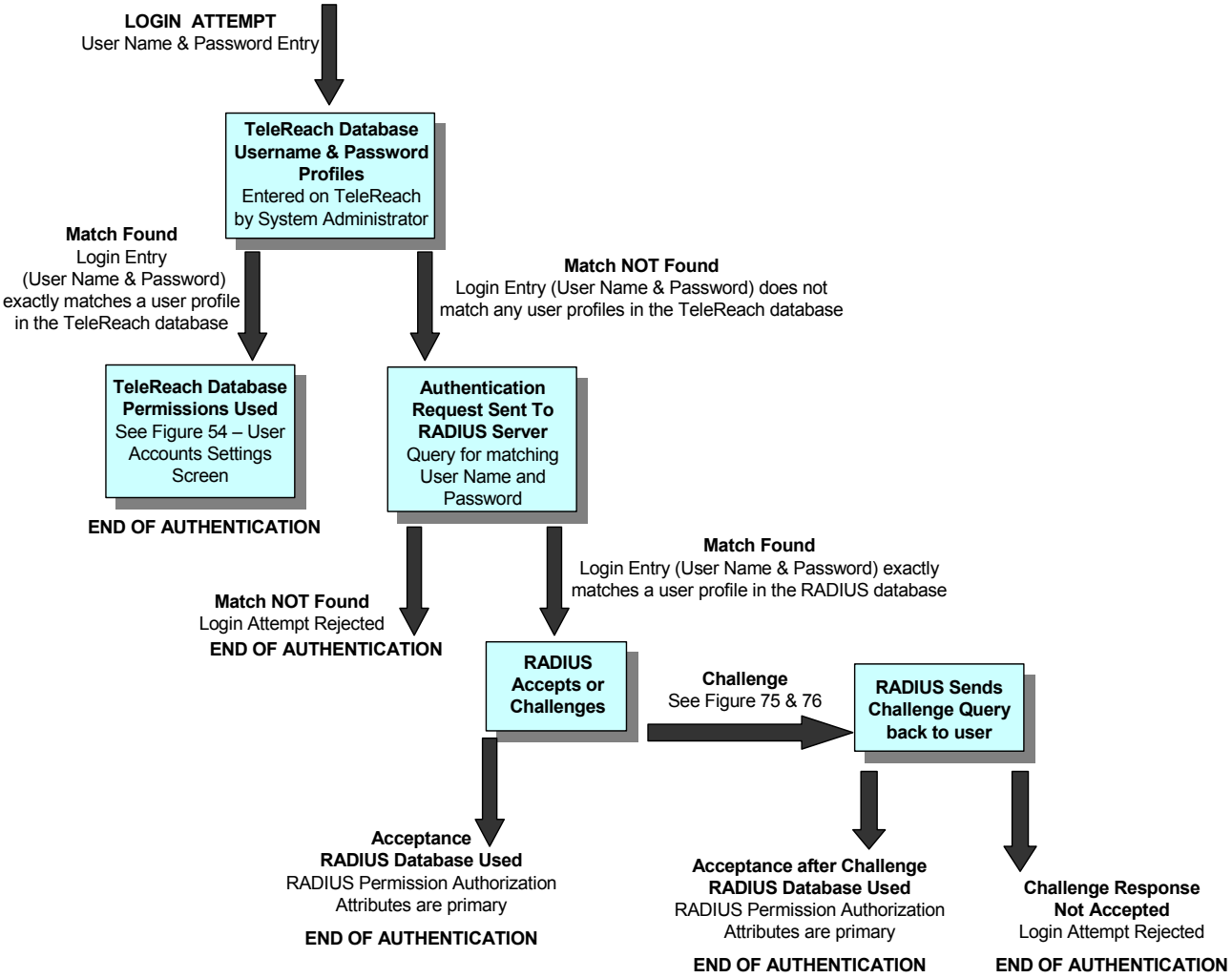

LOGIN ATTEMPT
User Name & Password Entry
TeleReach Database Username & Password Profiles
Entered on TeleReach by System Administrator
Match Found
Login Entry (User Name & Password) exactly matches a user profile in the TeleReach database
Match NOT Found
Login Entry (User Name & Password) does not match any user profiles in the TeleReach database
TeleReach Database Permissions Used
See Figure 54 – User Accounts Settings Screen
END OF AUTHENTICATION
Authentication Request Sent To RADIUS Server
Query for matching User Name and Password
Match NOT Found
Login Attempt Rejected
END OF AUTHENTICATION
Match Found
Login Entry (User Name & Password) exactly matches a user profile in the RADIUS database
RADIUS Accepts or Challenges
Challenge
See Figure 75 & 76
RADIUS Sends Challenge Query back to user
Acceptance
RADIUS Database Used
RADIUS Permission Authorization Attributes are primary
END OF AUTHENTICATION
Acceptance after Challenge
RADIUS Database Used
RADIUS Permission Authorization Attributes are primary
END OF AUTHENTICATION
Challenge Response Not Accepted
Login Attempt Rejected
END OF AUTHENTICATION

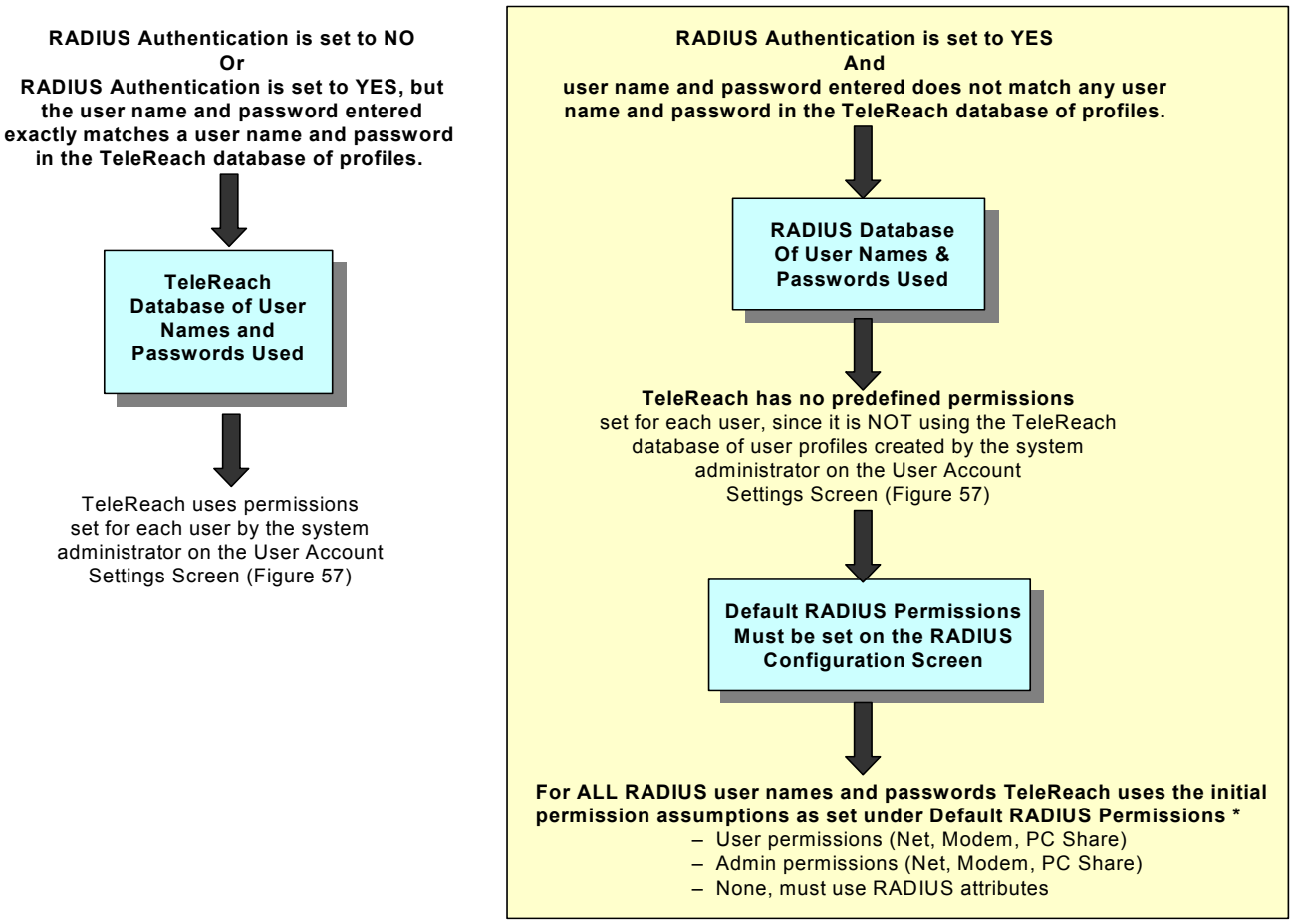
Figure 59. RADIUS Authentication Process

- **Default RADIUS Permissions:** With RADIUS Authentication operational, "Default RADIUS Permissions" defines for TeleReach the basic initial permissions or privileges for all RADIUS user name and password profiles – see Figure 60.

NOTE: These initial RADIUS permissions can be changed for each individual user, by overriding attributes returned by the RADIUS server. Please see Controlling TeleReach User Permissions via RADIUS FILTER-ID Attributes in Appendix E. The RADIUS Server.

  - **User permissions (Net, Modem, PC Share) – (Default):** All RADIUS authenticated users will have user level (non administrative) access to TeleReach over the network via TRC Client, via web browser, and via modem. All users will also have PC Share power, giving them concurrent access capability. That means they can connect to TeleReach even if another user is already connected. Keyboard and mouse control is also granted.

Figure 60. RADIUS Users Initial TeleReach Permissions


RADIUS Authentication is set to NO
Or
RADIUS Authentication is set to YES, but the user name and password entered exactly matches a user name and password in the TeleReach database of profiles.
TeleReach Database of User Names and Passwords Used
TeleReach uses permissions set for each user by the system administrator on the User Account Settings Screen (Figure 57)
RADIUS Authentication is set to YES
And
user name and password entered does not match any user name and password in the TeleReach database of profiles.
RADIUS Database Of User Names & Passwords Used
TeleReach has no predefined permissions set for each user, since it is NOT using the TeleReach database of user profiles created by the system administrator on the User Account Settings Screen (Figure 57)
Default RADIUS Permissions Must be set on the RADIUS Configuration Screen
For ALL RADIUS user names and passwords TeleReach uses the initial permission assumptions as set under Default RADIUS Permissions *
– User permissions (Net, Modem, PC Share)
– Admin permissions (Net, Modem, PC Share)
– None, must use RADIUS attributes

* NOTE: These initial RADIUS permissions can be changed for each individual user, by overriding attributes returned by the RADIUS server. Please see **Controlling TeleReach User Permissions via RADIUS FILTER-ID Attributes** in **Appendix E: The RADIUS Server** for more information.

- **Admin permissions (Net, Modem, PC Share):** All RADIUS authenticated users will have Administrator level (with Admin powers) access to TeleReach over the network or via modem. All users will also have PC Share power, giving them concurrent access capability. That means they can connect to TeleReach even if another user is already connected. Keyboard and mouse control is also granted

NOTE: Control during concurrent access in PC Share mode will be based on first active keyboard/mouse input, so multiple remote users attempting keyboard input or mouse movement at exactly the same moment may experience uneven control.

NOTE: RADIUS users with individual PC Share capability will only be able to connect concurrently to TeleReach, provided the global PC Share Mode setting on the Security Configuration screen (Figure 56) also enables it.

- **None, must use RADIUS attributes:** No assumed initial permissions exist. All RADIUS authenticated users will be denied access to TeleReach, unless they are given specific permission to gain access. Specific permission takes the form of FILTER-ID attributes, which are returned by the RADIUS server for each individual RADIUS user. Please see Controlling TeleReach User Permissions via RADIUS FILTER-ID Attributes in Appendix B. The RADIUS Server.

- **Authentication Type:** Controls which password authentication protocol will be used between TeleReach Control on the Remote PC, TeleReach, and the RADIUS server.

- **PAP (Default):** PAP (Password Authentication Protocol) will be used to encrypt and authenticate the user's password.

NOTE: PAP is slightly less secure than CHAP, but some RADIUS servers require the PAP protocol.

- **CHAP:** CHAP (Challenge Authentication Protocol) will be used to encrypt and authenticate the user's password.

- **Server Secret:** The RADIUS server and TeleReach, as a RADIUS client, share a common secret used to encrypt the RADIUS protocol data. Enter the secret here. The keystrokes entered for the secret can be any combination of keystrokes up to 128 characters in length.
  - **Confirm Secret:** Enter secret again for reconfirmation of keystrokes.
- **Primary Server IP:** Enter the IP address of the primary RADIUS server. A primary server IP is required for the RADIUS features to function.
- **Secondary Server IP:** Optional. Enter the IP address of a secondary RADIUS server. If the primary server becomes unavailable, TeleReach will redirect its RADIUS requests to this secondary or backup server.
- **Server UDP Port:** Sets the ports used by the RADIUS server.
  - **Standard 1812 & 1813 (default):** Uses port 1812 for Authentication and port 1813 for Accounting. These are the ports most often used by modern RADIUS systems.
  - **Legacy Ports 1645 & 1646:** Uses port 1645 for Authentication and port 1646 for Accounting. These ports are most often used by older RADIUS systems.
  - **Custom UDP Ports:** Enables the administrator to enter specific port numbers for the RADIUS server.
  - **Authentication Port:** Enter port number used by RADIUS for Authentication.
- **Accounting Port:** Enter the port number used by RADIUS for Accounting.
- **Enable RADIUS Accounting:** Turns the RADIUS accounting function on or off.
  - **NO (default):** RADIUS accounting is operational. Log in and log out information for each user will only be recorded in TeleReach's built-in event log.
  - **YES:** RADIUS accounting is operational. Log in and log out information for each user will be recorded in TeleReach's built-in event log, and then TeleReach will send a RADIUS accounting message to the RADIUS server.

NOTE: If RADIUS Authentication has been enabled, the choices previously made for Secret Server, Confirm Secret, Primary Server IP, and Secondary Server IP will also accommodate RADIUS Accounting. If these selections have not been made during a previous enabling of RADIUS Authentication, they must now be selected for RADIUS Accounting.

Press <CTRL+S> to save changes or <ESC> to cancel changes, and return to the Configuration Menu (Figure 52). Saved Radius Configuration changes will not take effect until TeleReach is restarted.

[T] Time and Date

Use the keys <Tab>, <↑> or <↓> to select each line on the Time and Date screen. Press <Enter>, <Tab> or <↓> when your entry on each line is complete.

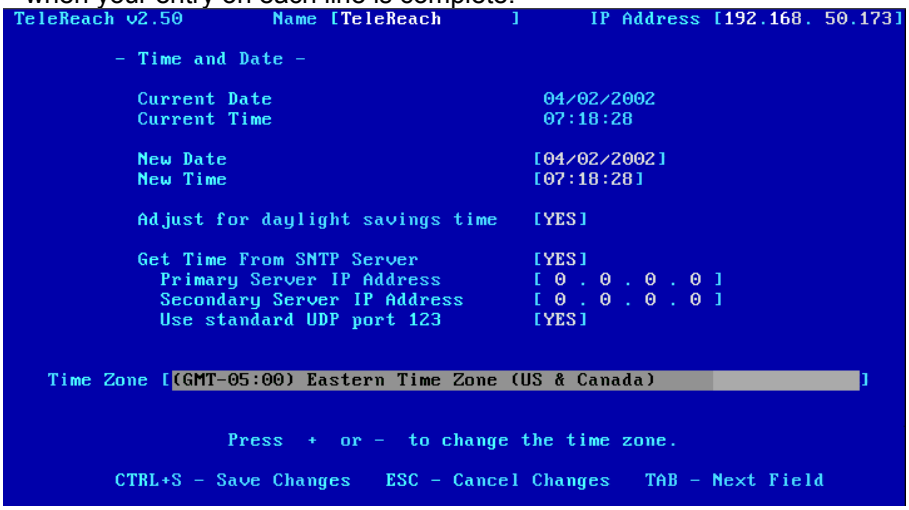

TeleReach v2.50 Name [TeleReach] IP Address [192.168. 50.173]
- Time and Date -
Current Date 04/02/2002
Current Time 07:18:28
New Date [04/02/2002]
New Time [07:18:28]
Adjust for daylight savings time [YES]
Get Time From SNTP Server [YES]
Primary Server IP Address [0 . 0 . 0 . 0]
Secondary Server IP Address [0 . 0 . 0 . 0]
Use standard UDP port 123 [YES]
Time Zone [(GMT-05:00) Eastern Time Zone (US & Canada)]
Press + or - to change the time zone.
CTRL+S - Save Changes ESC - Cancel Changes TAB - Next Field

Figure 61. Time and Date Screen

Press <CTRL+S> to save changes or <ESC> to cancel changes, and return to the Configuration Menu (Figure 52). Saved Time and Date changes will not take effect until TeleReach is restarted.

- **New Date / New Time:** To manually input changes to current date and time values.
- **Adjust for daylight savings time:** Toggle between YES and NO to reflect whether your country or state follows the daylight savings time procedure.
- **Get Time From SNTP Server:** Indicates whether TeleReach time/date should be automatically synchronized with the time/date of an external SNTP server.
    - **Primary Server IP Address:** IP address of first SNTP server to attempt time synchronization.
    - **Secondary Server IP Address:** IP address of second SNTP server to query, if primary server is unavailable.
    - **User standard UDP port 123:** Allows user to modify UDP port used for SNTP time synchronization. Consult your SNTP server administrator to determine if this value should be adjusted.
- **Time Zone:** Select the time zone in which your TeleReach unit is physically located.

[K] Key Configuration

Select [K] to add TeleReach User License Key codes, increasing the total number of usernames that can be entered into the TeleReach system.

[M] Return to the main menu

Select [M] Return to the main menu and press <Enter> to return to the Main Menu (Figure 51).

[U] Add, change, or delete user accounts

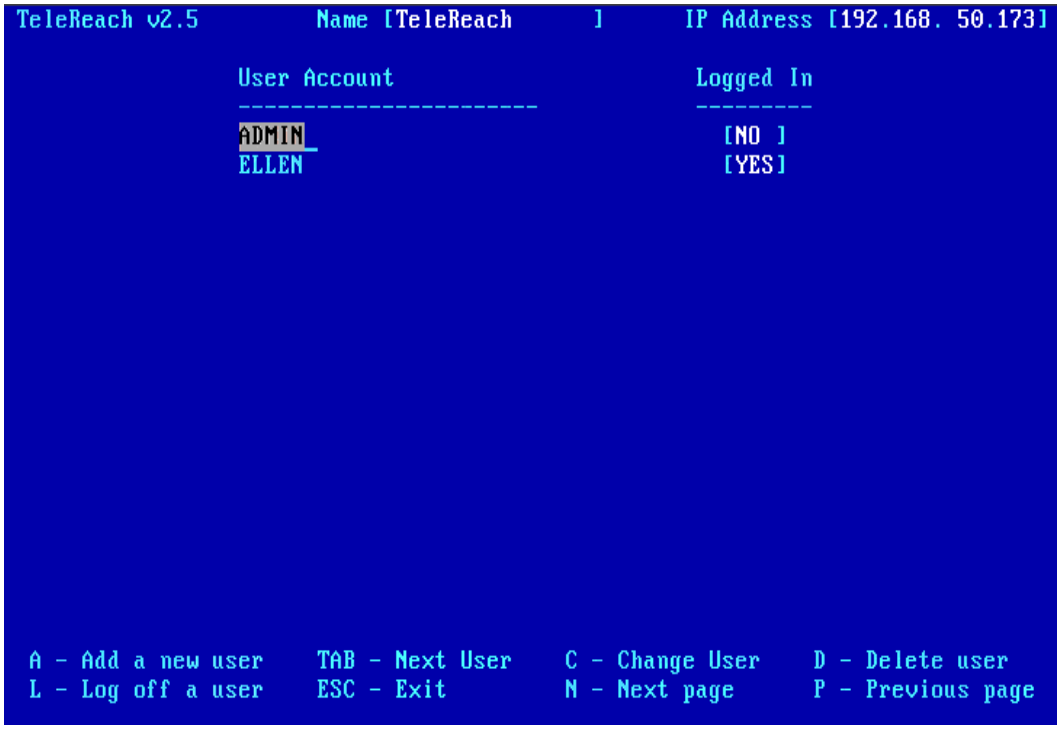


Figure 62. Add, Change, or Delete User Accounts Screen

The Add, Change, or Delete User Accounts screen (Figure 62) lists all existing user accounts for TeleReach and shows if each user is currently logged in to TeleReach from a Remote PC. Administrators who log on to the TeleReach Admin Console (only administrators can log on at the TeleReach Admin Console), can use this screen to administer TeleReach user accounts.

A - Add a new user

Type <A> for Add a new user to access the User Account Settings screen (Figure 63) and add a new user profile.

> **Note:** TeleReach will limit the number of total users (not including ADMIN) that can be added to the database, depending on the number of user licenses purchased. Be sure to enter your user license key codes by selecting [K] Key Configuration in the Configuration menu.

Use the keys <Tab>, <↑> or <↓> to select each line on the User Account Settings screen and the <space bar>, or the <←> or <→> keys to toggle between available entries. Press <Enter>, <Tab> or <↓> when your entry on each line is complete.

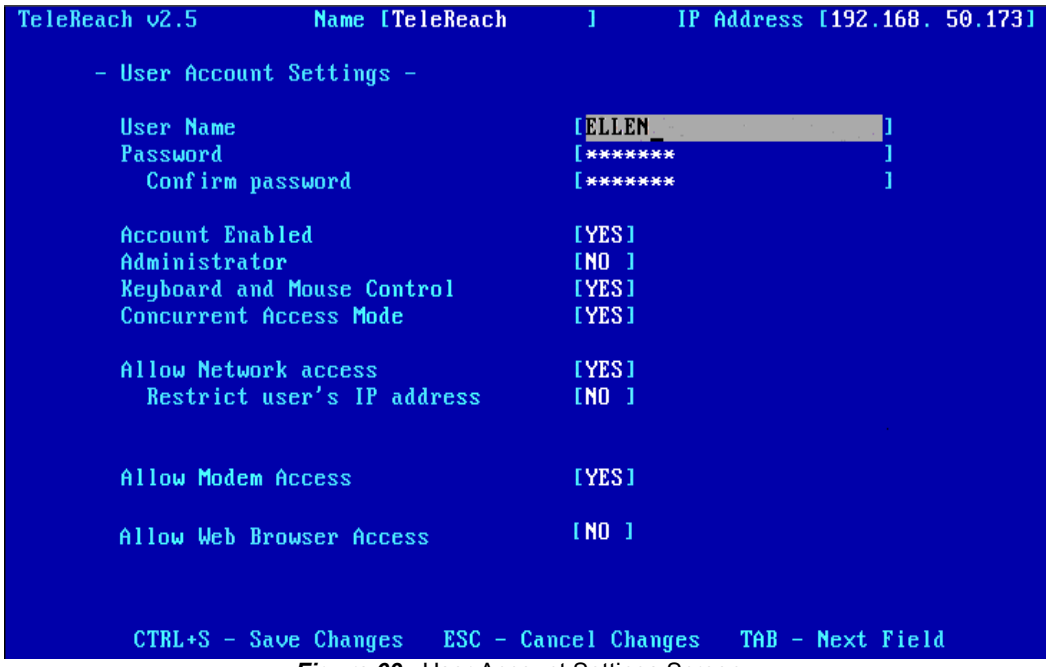

TeleReach v2.5 Name [TeleReach] IP Address [192.168. 50.173]
- User Account Settings -
User Name [ELLEN]
Password [*******]
Confirm password [*******]
Account Enabled [YES]
Administrator [NO]
Keyboard and Mouse Control [YES]
Concurrent Access Mode [YES]
Allow Network access [YES]
Restrict user's IP address [NO]
Allow Modem Access [YES]
Allow Web Browser Access [NO]
CTRL+S - Save Changes ESC - Cancel Changes TAB - Next Field

Figure 63. User Account Settings Screen

- **User Name:** Enter a new user name.
- **Password:** Enter a password to be associated with this user name.
  - **Confirm password:** Enter password again for reconfirmation of keystrokes.

NOTE: Passwords are case sensitive. For user log in, passwords must be entered by the user in the exact case combination in which they were created here.

NOTE: User names and passwords entered in this TeleReach user profile database each have a 24 character limit. RADIUS user names and passwords can each be up to 128 characters.

- **Account Enabled:**
  - **YES (default):** Permits this user name and profile to be actively used to gain access to TeleReach.
  - **NO:** The saved user profile will exist, but cannot be actively used to log in to TeleReach.
- **Administrator:**
  - **NO (default):** The user name being profiled will not have Administrator privileges.
  - **YES:** This user will have Administrator privileges and powers.
- **Keyboard and Mouse Control:** Determines whether user has keyboard and mouse control during a remote connection.
  - **YES (default):** Grants the user keyboard and mouse control.
  - **NO:** User will not have keyboard and mouse control during a remote connection.

NOTE: The Keyboard and Mouse Control setting chosen determines whether the next setting for Concurrent Access Mode, if activated, will result in PC Share or Public view.

- **Concurrent Access Mode:** Determines each individual user's ability to remotely log on to TeleReach when another user has already established a remote connection.
    - **YES (default):** User can log on to TeleReach and establish a remote connection when another user has already established a remote connection. The status of this sharing depends upon the user's prior setting for Keyboard and Mouse Control.
        - *Keyboard and Mouse Control = YES:* Sharing is in PC Share mode - concurrent access by more than one user. However, control will be based on first active keyboard/mouse input for all users with Keyboard and Mouse Control, so multiple remote users attempting keyboard input or mouse movement at exactly the same moment may experience uneven control.
        - *Keyboard and Mouse Control = NO:* Sharing is in Public View mode - concurrent access by more than one user, but each user with NO Keyboard and Mouse Control can only view the video and has no control.
    - **NO:** This user can only log on to TeleReach and establish a remote connection if no other user is currently logged on.

NOTE: Concurrent Access Mode is an individual user setting. For global access settings see PC Share Mode on the Security Configuration screen (Figure 56).

- **Allow Network access:** Determines whether this user will be able to access TeleReach via a Network connection for LAN/WAN or Internet access.
    - **YES (default):** The user will have Network connection capability.
        - **Restrict user's IP address:** Determines whether this user's remote network access will be limited to a particular remote IP address location or level.
            - **NO (default):** The user has remote network access to TeleReach from any remote IP address location.
            - **YES:** The user's network access to TeleReach will be limited to a network connection originating from a designated remote IP address location or remote IP address level.

NOTE: Once Restrict user's IP address has been enabled, an entry must be made in at least one of the IP Mask fields, since 0.0.0.0 is an impossible IP address.

            - **IP Mask:** Enter remote IP address location from which this user will be granted remote network access.

              A specific IP Mask instructs TeleReach to grant remote access to only this specific remote IP address. For example, a mask of 10.0.0.1 instructs TeleReach to grant remote access from the remote IP address location 10.0.0.1 only.

              The value 255 acts as a wildcard in any location of the IP mask address. For example, a mask of 10.0.0.255 instructs TeleReach to grant this user remote access from any remote IP address location within the range 10.0.0.0 to 10.0.0.255. Similarly, a mask of 192.255.255.255 instructs TeleReach to grant this user remote access from any remote IP address location beginning with 192.
    - **NO:** The user has no network connection capability.

- **Allow Modem Access:** Determines whether this user will be able to access TeleReach via a Modem connection for access via and analog telephone line.
    - **NO:** This user will not have Modem connection capability.
    - **YES (default):** The user will have Modem connection capability.
- **Allow Web Browser Access:** Determines whether this user will be able to access TeleReach via Web Browser.
    - **NO:** This user will not have Web Browser connection capability.
    - **YES (default):** The user will have Web Browser connection capability.

Press <CTRL+S> to save changes or <ESC> to cancel changes, and return to the Add, Change, or Delete User Accounts screen (Figure 62).

C - Change user profile

Use the keys <Tab>, <↑> or <↓> to select a user from the Add, Change, or Delete User Accounts screen (Figure 62) and press <Enter> or type <C> to change a user's profile specifics. The User Account Settings screen (Figure 63) will appear.

Use the keys <Tab>, <↑> or <↓> to select each line on the **User Account Settings** screen (Figure 63) and the <space bar>, or the <←> or <→> keys to toggle between available entries. Press <Enter>, <Tab> or <↓> when your entry on each line is complete, setting the profile specifics for this user.

See **A – Add a new user** and the **User Account Settings** screen (Figure 63) for details on setting user profile specifics on the User Accounts Settings screen. Press <CTRL+S> to save changes or <ESC> to cancel changes, and return to the Add, Change, or Delete User Accounts screen (Figure 62).

D - Delete user

Use the keys <Tab>, <↑> or <↓> to select a user from the Add, Change, or Delete User Accounts screen (Figure 62) and type <D> to delete the user profile selected. TeleReach will ask you if you are sure that you want to delete this user.

- Y: Yes. The selected user will be deleted and TeleReach will return you to the Add, Change, or Delete User Accounts screen (Figure 62), showing all user profiles, with the deleted user no longer listed.
- N: No. TeleReach will return you to the Add, Change, or Delete User Accounts screen (Figure 62), showing all user profiles, with the selected user still listed.

L - Log off a user

Use the keys <Tab>, <↑> or <↓> to select a user from the Add, Change, or Delete User Accounts screen (Figure 62) that is currently remotely logged in to TeleReach (Logged in – YES) and type <L> to log off the selected user. TeleReach will ask you if you are sure that you want to log off this user.

- Y: Yes. The selected user will be logged off of TeleReach and their remote session will end. TeleReach will return you to the Add, Change, or Delete User Accounts screen (Figure 62), showing all user profiles, with the selected user listed as no longer logged in.
- N: No. TeleReach will return you to the Add, Change, or Delete User Accounts screen (Figure 62), showing all user profiles, with the selected user still listed as being logged in.

N - Next page or P - Previous page

When the list of users on the Add, Change, or Delete User Accounts screen (Figure 62) is long, use the keys <N>, or <P> to scroll through the list one screen or page at a time.

[V] View TeleReach status

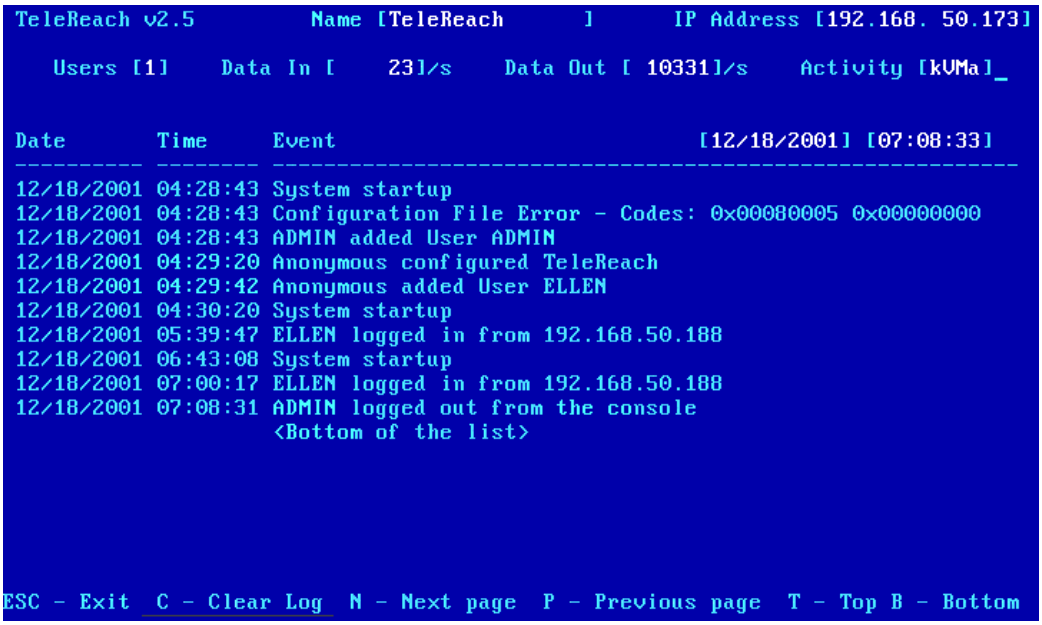

TeleReach v2.5 Name [TeleReach] IP Address [192.168. 50.173]
Users [1] Data In [23]/s Data Out [10331]/s Activity [kVMa]
Date Time Event [12/18/2001] [07:08:33]
12/18/2001 04:28:43 System startup
12/18/2001 04:28:43 Configuration File Error - Codes: 0x00080005 0x00000000
12/18/2001 04:28:43 ADMIN added User ADMIN
12/18/2001 04:29:20 Anonymous configured TeleReach
12/18/2001 04:29:42 Anonymous added User ELLEN
12/18/2001 04:30:20 System startup
12/18/2001 05:39:47 ELLEN logged in from 192.168.50.188
12/18/2001 06:43:08 System startup
12/18/2001 07:00:17 ELLEN logged in from 192.168.50.188
12/18/2001 07:08:31 ADMIN logged out from the console
<Bottom of the list>
ESC - Exit C - Clear Log N - Next page P - Previous page T - Top B - Bottom

Figure 64. TeleReach Event Log Screen

The TeleReach Event Log screen (Figure 64) shows a log file containing information about TeleReach log in and connection activities. This Event Log stores TeleReach events, such as user login, or logout; bad login attempts; Admin login, and logout at the TeleReach Admin console; Admin changes to the system configuration; Admin user profile additions, changes, or deletions; modem activity; system startup, and shutdown; and all errors that occur – See Event Log File and On Screen Error Codes in Appendix I: Troubleshooting for a listing of error codes with their meaning and suggested solution. Up to 2,048 events can be stored in one log file. The log also saves the time and date of each event.

TeleReach also auto-recovers from fatal errors. If a fatal error occurs, it is recorded and TeleReach automatically reboots. If a non-fatal error occurs, it is recorded and TeleReach waits until all users are logged off the system, and then it reboots to make sure the previous non-fatal error does not escalate to a fatal error.

ESC – Exit: Exits the log and returns to the Main Menu (Figure 51).

C – Clears or erases the data currently displayed in the log file.

N – Next page, or P – Previous page: Use the keys <N>, or <P> to scroll through the log file one screen or page at a time.

T – Top, or B – Bottom: Use <T> or <P> keys to jump to the top or bottom of the log file.

[R] Restart or Shutdown the TeleReach

Offers options to restart <R>, shutdown <S>, or cancel <Esc> the restart or shutdown command. <R> Restarts the TeleReach unit and brings the TeleReach Admin Console back to the TeleReach Initialization screen (Figure 47).

[X] Logout

Logs the current administrative user off TeleReach and exits to the Log On screen (Figure 48).

[S] Logout & view TeleReach status

Logs the current administrative user off TeleReach and exits to the TeleReach Event Log screen (Figure 64), showing a log file containing information about TeleReach log in and connection activities.

[D] Diagnostics

Displays the TeleReach Debug Log File Menu (Figure 65). Some important commands are reviewed below. Information on any command can be obtained by using the HELP feature.

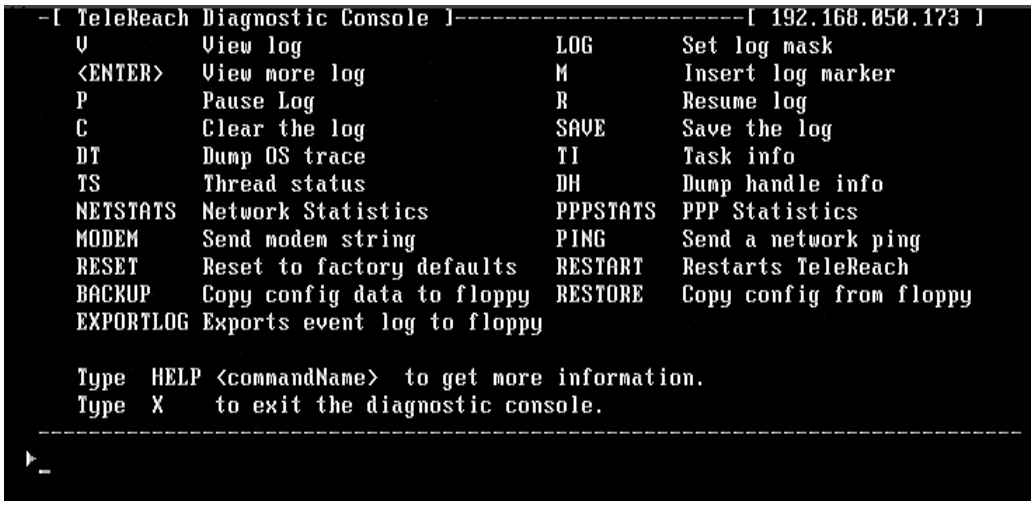

-[TeleReach Diagnostic Console]----------[192.168.050.173]
V View log
LOG Set log mask
<ENTER> View more log
M Insert log marker
P Pause Log
R Resume log
C Clear the log
SAVE Save the log
DT Dump OS trace
TI Task info
TS Thread status
DH Dump handle info
NETSTATS Network Statistics
PPPSTATS PPP Statistics
MODEM Send modem string
PING Send a network ping
RESET Reset to factory defaults
RESTART Restarts TeleReach
BACKUP Copy config data to floppy
RESTORE Copy config from floppy
EXPORTLOG Exports event log to floppy
Type HELP <commandName> to get more information.
Type X to exit the diagnostic console.

Figure 65. TeleReach Debug Log File Menu

V - View the log

Press the <V> key and then press <Enter>. A Debug Log File (Figure 66) displays. The log file contains specifics on TeleReach's operational performance.

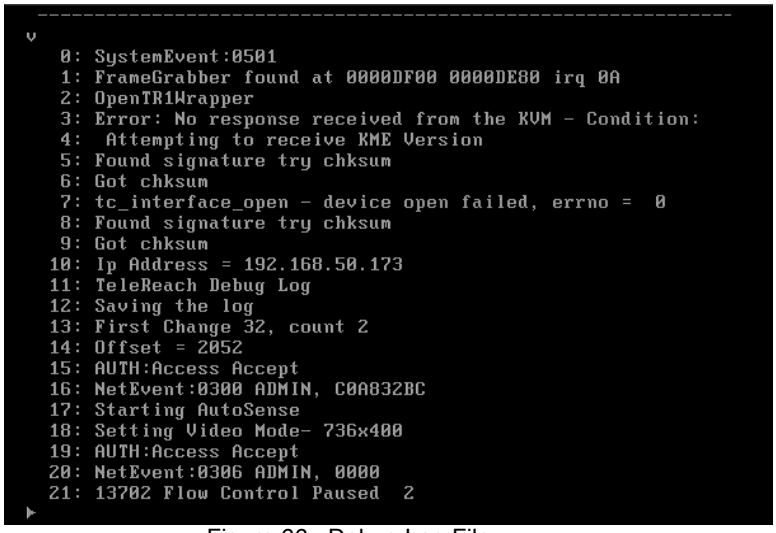

0: SystemEvent:0501
1: FrameGrabber found at 0000DF00 0000DE80 irq 0A
2: OpenTR1Wrapper
3: Error: No response received from the KVM - Condition:
4: Attempting to receive KME Version
5: Found signature try chksum
6: Got chksum
7: tc_interface_open - device open failed, errno = 0
8: Found signature try chksum
9: Got chksum
10: Ip Address = 192.168.50.173
11: TeleReach Debug Log
12: Saving the log
13: First Change 32, count 2
14: Offset = 2052
15: AUTH:Access Accept
16: NetEvent:0300 ADMIN, C0A832BC
17: Starting AutoSense
18: Setting Video Mode- 736x400
19: AUTH:Access Accept
20: NetEvent:0306 ADMIN, 0000
21: 13702 Flow Control Paused 2

Figure 66. Debug Log File

HELP - Displays Information on Each Available Command

Type <HELP> then a space, and then the command name, and press <Enter>. Information on the command entered will be displayed. For example, entering HELP Modem will explain the Modem command, returning the information “MODEM <string> Sends a string to the modem.”

RESET - Resets TeleReach Back To All Factory Defaults

Type <RESET> and then press <Enter>. Type <Y> to proceed or <N> to cancel. The RESET function causes the TeleReach unit to automatically restart, and returns all settings back to their factory default status, including a 0.0.0.0 IP address and only the default user name/password of <admin>/<raritan>.

BACKUP - Copies the TeleReach Configuration File to a Floppy Disk

Remove TeleReach’s front panel by unscrewing the two hand screws in the front of the unit. Place a blank, formatted floppy diskette in the TeleReach floppy drive and type <BACKUP> and then press <Enter>. TeleReach will copy a backup of the Configuration file (Trconfig.tr2) to the floppy diskette. The Configuration file contains TeleReach setup information, entered from the TeleReach Admin Console, such as user profiles and security settings. In the event that you need to run the Recovery CD-ROM (see Appendix G) to refresh TeleReach, or use the RESET command, performing a BACKUP first will retain configuration file settings, which can be re-loaded later with the RESTORE command.

EXPORTLOG - Exports the TeleReach Event Log to a Floppy Disk

Remove TeleReach’s front panel by unscrewing the two hand screws in the front of the unit. Place a blank, formatted floppy diskette in the TeleReach floppy drive and type <EXPORTLOG> and then press <Enter>. TeleReach will export the Event Log (Figure 64) as a text file to the floppy diskette with the default file name TRlog.txt. If you wish a different file name type EXPORTLOG, then a space, then the filename you wish to assign, then press <Enter>.

SAVE - Saves a Copy of the Debug Log to a Floppy Disk

Remove TeleReach’s front panel by unscrewing the two hand screws in the front of the unit. Place a blank, formatted floppy diskette in the TeleReach floppy drive and type <SAVE>, then a space, then type <A:\filename.txt>, and then press <Enter>. TeleReach will save a copy of the Debug Log File (Figure 66) as a text file to the floppy diskette. Filename can be any name of your choosing. For example, SAVE A:\debug.txt will save a text file called debug to the floppy drive.

RESTORE - Loads Config File From Floppy Disk to TeleReach

Remove TeleReach's front panel by unscrewing the two hand screws in the front of the unit. Place a blank, formatted floppy diskette in the TeleReach floppy drive and type <RESTORE> and then press <Enter>. TeleReach restores the configuration file (Trconfig.Tr2) from the floppy drive, previously copied to the floppy diskette with the BACKUP command.

X - Exits the console

To exit the Debug Log File (Figure 66) press the <X> key and then press <Enter>. You will be returned to the Main Menu (Figure 51).

APPENDIX A: Toolbar Buttons, Key Strokes & Menu Controls

TeleReach Toolbar / Key Stroke Combinations

NOTE: Key Stroke Combinations only function in the TeleReach Control client software; if you are accessing TeleReach via web browser, use the appropriate toolbar button.

Toolbar Button	Key Stroke Combination	Button Name	Function
	<Ctrl-Alt-C>	Connect	Opens the Connect window for access to TeleReach from the Remote PC.
	<Ctrl-Alt-X>	Disconnect	Disconnects the Remote PC from TeleReach, ending a remote communication session.
	<Ctrl-Alt-B>	Browse	Searches, from the Remote PC, for TeleReach units connected to the same network or analog telephone line as the Remote PC.
	<Ctrl-Alt-P>	Properties	Opens the Modify Connection window to change Connection Speed and Color Depth. Also enables alteration of Progressive Update, Internet Flow Control, and Smoothing.
	<Ctrl-Alt-S>	Synchronize Mouse	Realigns Target Server Mouse Pointer with TeleReach Mouse Pointer.
	<Ctrl+Alt+Q>	Single Mouse Cursor	Toggle button. Deletes the TeleReach Mouse Pointer from the screen, showing only the Target Server's Mouse Pointer inside the TeleReach window. Recommended for LAN or very fast Internet connections only. To invoke the TeleReach Mouse Pointer for access to Toolbar Icons, simultaneously press the keys <Ctrl+Alt+Q>.
	<Ctrl-Alt-R>	Refresh Screen	Refreshes video screen, filling in any bits of missing video data.
	<Ctrl-Alt-A>	Auto-sense Video	Manually senses and aligns TeleReach with video settings and image currently being viewed.
	none	Video Settings	Opens the Settings window to adjust the Video Settings, including Noise Filter, PLL Settings, Color Settings, and auto-sensing or automatic sensing of video settings. See 7. Fine-Tune TeleReach Control Software for information on automatic calibration of Color Settings.
	None	Calibrate Color	(Web Client Only) Runs color calibration routine (see "Fine-Tune TeleReach Control Software" for usage).
	None	Change Video Paths	(Web Client Only) Allows user to switch to a different video path .
	none	Enter On-Screen Menu	Accesses On-Screen User Interface of connected KVM switch.

	<ESC>	Exit On-Screen Menu	Deactivates On-Screen User Interface of connected KVM switch.
	<Ctrl-Alt-D>	Send Ctrl+Alt+Del	Sends a Control-Alt-Delete command to the Target Server.
	none	Keyboard Macros	(Web Client Only) Invokes Keyboard Macros screen.
	none	Options	(Web Client Only) Invokes program options dialog box.
	none	Restart TeleReach	(Web Client Only) Sends command to restart TeleReach unit.
	none	Admin Console View	(Web Client Only) Toggles view to/from TeleReach Administrative Console [for authorized users].
	none	About	Displays TeleReach Control software (TRC) version number, and copyright.

Additional TeleReach Functional Key Stroke Combinations

Key Stroke Combination	Function
<Ctrl-Alt-I>	Displays connection information about the current remote connection to TeleReach.

TeleReach Menu Controls

NOTE: These menu controls are not available in the TeleReach Web Browser Client. Most functions, however, are accessible via the TeleReach Web Browser Client toolbar.

Menu Item	Pull-Down Option	Function
	Restore	Restores the active window to normal size.
	Move	Changes the active window's position.
	Size	Changes the active window's size.
	Minimize	Reduce the active window to an icon.
	Maximize	Enlarge the active window to full size.
	Close	Closes the active window.
	Next	Switches to the next window.
Connection	Connect	Opens the Connect window for access to TeleReach from a Remote PC.
	Browse	Searches, from a Remote PC, for TeleReach units connected to the same network or analog telephone line as the Remote PC.
	Properties	Opens the Modify Connection window to change Connection Speed and Color Depth. Also enables alteration of Progressive Update, Internet Flow Control, and Smoothing.
	Connection Info	Displays information about the current remote connection to TeleReach.
	Disconnect	Disconnects Remote PC from TeleReach, ending a remote communication session.
	Exit	Closes the TRC software and the TeleReach window, disconnecting Remote PC from TeleReach, and ending the remote communication session

Keyboard	Send Ctrl+Alt+Delete	Sends a Control-Alt-Delete command to the active Target Server.
	Enter On-Screen Menu	Activates On-Screen User Interface of connected KVM switch.
	Exit On-Screen Menu	Deactivates On-Screen User Interface of connected KVM switch.
	Keyboard Macros	Activates the Keyboard Macros window for building macros for specified keystrokes — see Appendix D: Keyboard Macros.
Video	Refresh Screen	Refreshes video screen, filling in any bits of missing video data.
	Auto-sense Video Settings	Manually senses and aligns TeleReach with video settings and image of active Target Server.
	Calibrate Color	Calibrates the Color Settings in the Video Settings window – see 7. Fine-Tune TeleReach Control Software.
	Video Settings	Opens the Settings window to adjust the Video Settings, including Noise Filter, PLL Settings, Color Settings, and auto sensing of video. See 7. Fine-Tune TeleReach Control Software for information on automatic calibration of Color Settings.
	Change Path	Enables the user to change their current path, if TeleReach is configured with multiple paths to multiple KVM configurations — see [C] Path Configuration in 8. Local Administrative Functions.
Mouse	Synchronize Mouse	Realigns Target Server Mouse Pointer with TeleReach Mouse Pointer.
	Single Mouse Cursor	Toggle button. Deletes the TeleReach Mouse Pointer from the screen, showing only the Target Server's Mouse Pointer inside the TeleReach window. Recommended for LAN or very fast Internet connections only. To invoke the TeleReach Mouse Pointer for access to Toolbar Icons, simultaneously press the keys <Ctrl+Alt+Q>.
Tools	Options	Opens an Options window with checkbox selections to turn on/off scroll borders, auto-sync of dual mouse cursors, and display of single mouse cursor instructions upon selection of the Single mouse cursor toolbar button. A gray border will surround video displayed within the TeleReach window of the TRC software, when the Show Scroll Borders checkbox is selected (default). Placing the TeleReach Mouse Pointer in the gray area scrolls the viewed image in the direction of the mouse pointer. The Options window is also used to set the KVM Switch OSUI Hotkey – see Configure TeleReach To Match Base KVM Switch's Hotkey in 6. Remote Operation.
	Admin Console	Admin remote access to TeleReach administration screens — see Appendix B: Remote Administration..
	Restart TeleReach	Administrative users can send a reboot command to the TeleReach unit, restarting TeleReach from a Remote PC. The remote connection will be terminated and must be reactivated after TeleReach reboots.
View	Toolbar	Toggle ON or OFF to show or hide the TeleReach Toolbar at the top of the TeleReach window. The toolbar contains buttons representing the most commonly used TeleReach functions.
	Status Bar	Toggle ON or OFF to show the TeleReach Status Bar at the bottom of the TeleReach window. The status bar contains information about the current session, including video sensing progress, bandwidth usage, security, and number of current remote connections to TeleReach.
Window	Cascade	Arranges all open windows so that they overlap.
	Tile	Arranges all open windows in a non-overlapping tile format.
	Arrange Icons	Arranges all of the minimized windows.
	Close All Windows	Closes all windows currently open within the TeleReach window.
Help	About TeleReach	Displays TeleReach software version number, creator, and copyright.

APPENDIX B: Remote Administration

Initial setup of TeleReach should be performed locally at the TeleReach Admin Console — following 3. Setup and 8. Local Administrative Functions.

Any administrative user logged on to TeleReach at a Remote PC can perform administrative functions remotely to make changes to the system, as long as TeleReach is set to allow remote administration privileges – see Allow remote administration on the Security Configuration screen (Figure 56).

Only users with administrator privileges – see User Account Settings screen (Figure 63) – can access the Remote Admin feature.

Accessing Remote Admin Console Window

1. Remotely access TeleReach as a user with administrative privileges from any Remote PC.
2. On the TeleReach pulldown menu select Tools > Admin Console (Figure 67).

Figure 67. Accessing Admin Console Window

3. The TeleReach **Admin Console** window will appear (Figure 68).

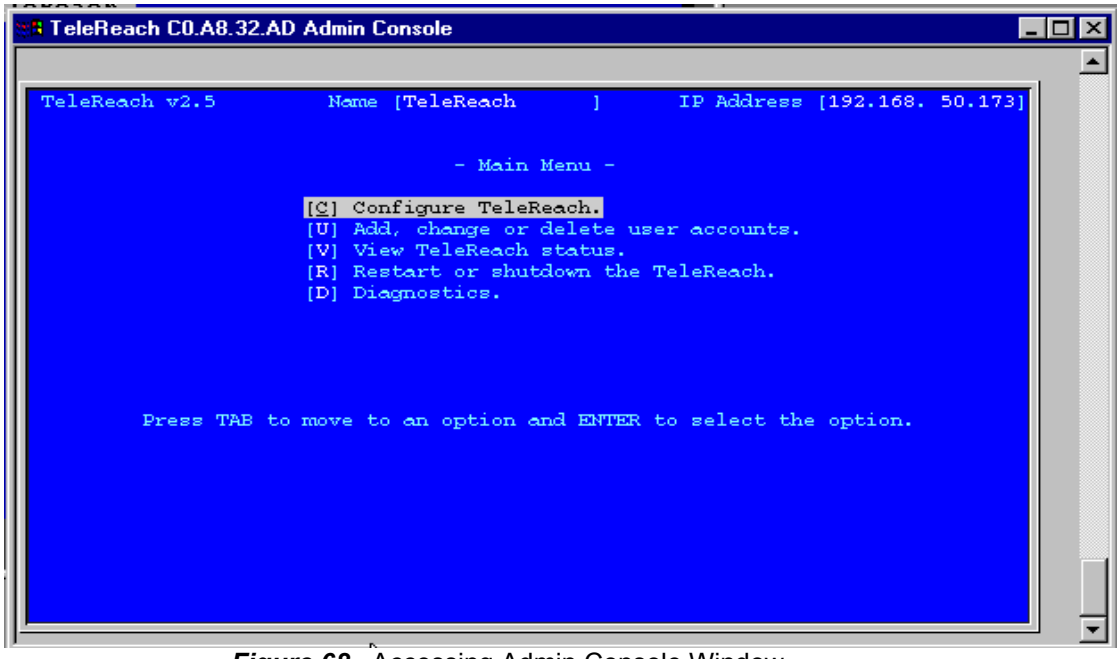

TeleReach C0.A8.32.AD Admin Console
TeleReach v2.5
Name [TeleReach]
IP Address [192.168. 50.173]
- Main Menu -
[C] Configure TeleReach.
[U] Add, change or delete user accounts.
[V] View TeleReach status.
[R] Restart or shutdown the TeleReach.
[D] Diagnostics.
Press TAB to move to an option and ENTER to select the option.

Figure 68. Accessing Admin Console Window

Operating Remote Admin Console

Remote operations available through the TeleReach Admin Console window are identical to the local Admin Console functions. The only exception is that the Main Menu shown through the remote Admin Console Window does not offer choices for [X] Logout, or [S] Logout and view TeleReach status, since logout would cause the remote user to loose contact with TeleReach.

See 8. Local Administrative Functions for an outline of administrative functions associated with each administration menu and screen.

Closing Remote Admin Console Window

To end the remote administration session, simply close out the Admin Console window by clicking the “X” in the window’s top right corner.

APPENDIX C: Web Browser Access

TeleReach features Web Browser access, providing a connection from any Remote PC supporting Microsoft Internet Explorer 4.0+. This access is available in addition to remote connection via TRC software. Web Browser access features are similar to TRC access features.

NOTE: Only Microsoft Internet Explorer 4.0+ supports TeleReach Web Browser access. Netscape or other Web browsers do not support TeleReach Web Brower access..

NOTE: Only TeleReach models TR364, TR363 and TR361 feature Web Browser Access.

NOTE: To enable Web Browser access to TeleReach administrators must set Enable Web Browser Interface to [YES] (the default) on the Network Configuration screen (Figure 53), and Web Browser access privileges for the connecting TeleReach user profile must be enabled by setting Allow Web Browser Access to [YES] (the default) on the User Account Settings screen (Figure 63).

Web Browser Access Versus TeleReach Remote Client

TeleReach's advanced web browser capabilities affords users great flexibility: with the appropriate TeleReach and network/firewall settings, one can access TeleReach from nearly any Windows computer in the world – without the inconvenience of installing proprietary software.

Nearly every feature of the TeleReach Remote Client is available in the TeleReach Web Browser Client. Due to the technical limitations of Internet Explorer, however, a few differences exist:

1. **Modem Access.** To access your TeleReach unit by directly dialing into its built-in modem, you will need to use the TeleReach Remote Client.
2. **Multiple Windows.** To open multiple TeleReach windows using your web browser, you will need to open a new browser window (select File>New>Window in the top menu of Internet Explorer) for each new connection that you wish to make. In contrast, the TeleReach Remote Client allows the multiple windows to be managed within the one TeleReach application.
3. **Menu Bar.** The TeleReach Web Browser Client does not have a top menu bar. However, every available function is accessible via the Toolbar (see Appendix A).
4. **Shortcut Keystrokes.** When using the TeleReach Web Browser Client, the special TeleReach shortcut keystrokes (e.g., <Ctrl-Alt-S> to synchronize mouse) are not available. However, every available function is accessible via the Toolbar (see Appendix A).
5. **Single Mouse Cursor Mode.** The TeleReach Web Browser Client does not offer the Single Mouse Cursor Mode of operation.

Besides these minor differences in operation, the TeleReach Web Browser Client and the installed TeleReach Remote Client offer identical features and capabilities.

Establishing A Web Browser Remote Connection

1. Open Microsoft Internet Explorer on the Remote PC.
2. Type the IP address of the TeleReach unit to be accessed in the address line and click <Go> (Figure 69).

Figure 69. Web Browser Connection Through Internet Explorer

3. The **TeleReach Web Client** window will open (Figure 70).

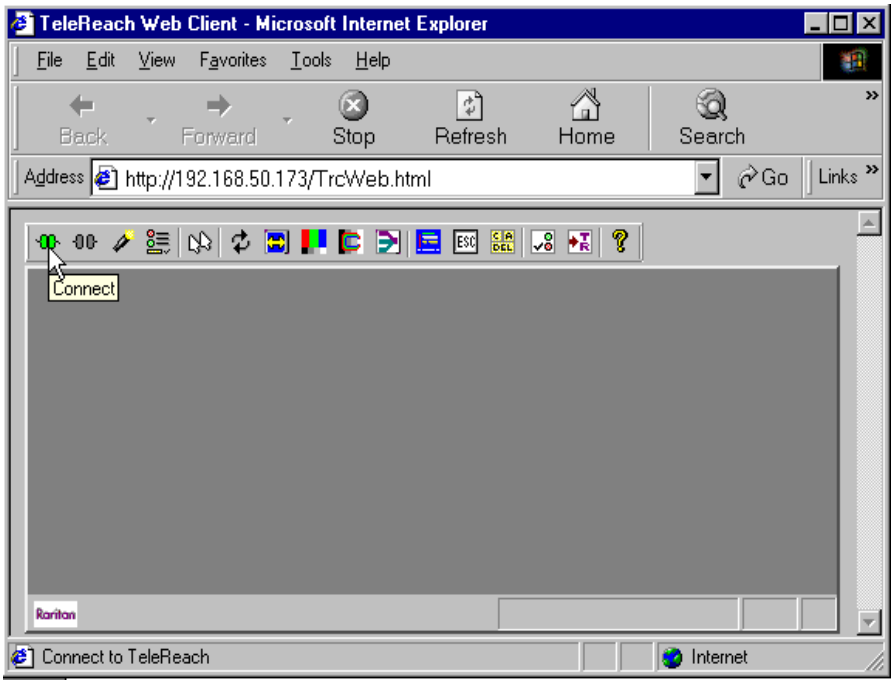


Figure 70. TeleReach Web Client Window

4. Click the <Connect> button on the TeleReach toolbar (Figure 70)

5. The **Connect** window (Figure 71) appears.
6. Click the desired connection profile to select it, and then click the <Connect> button.
7. The remote **Login** window (Figure 72) will appear.
8. Type User Name and Password and click <OK>.

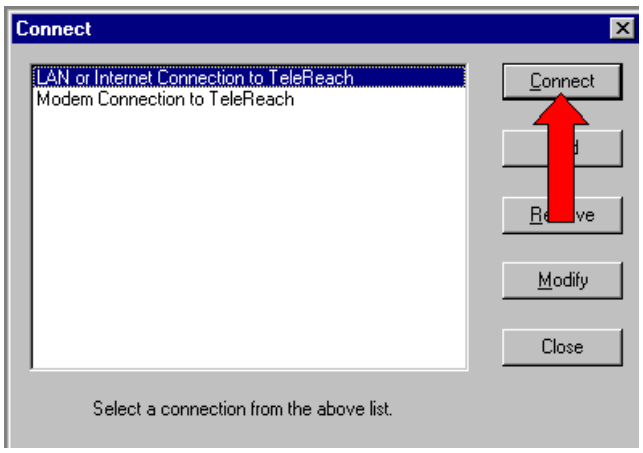


Figure 71. Connect Window

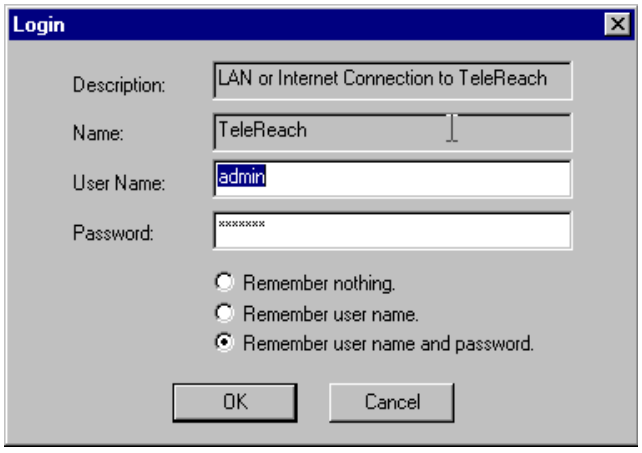


Figure 72. Login Window

NOTE: Each Microsoft Internet Explorer Web Browser window can support only one remote connection to TeleReach at a time. For multiple simultaneous remote connections via Web Browser, a new Microsoft Internet Explorer window must be opened for each desired TeleReach connection.

9. TeleReach will AutoSense the video of the image it is currently receiving from the KVM switch.

10. Click the window **title bar** under the TeleReach toolbar to activate the window viewing the active connection (Figure 73) and proceed with the remote session.

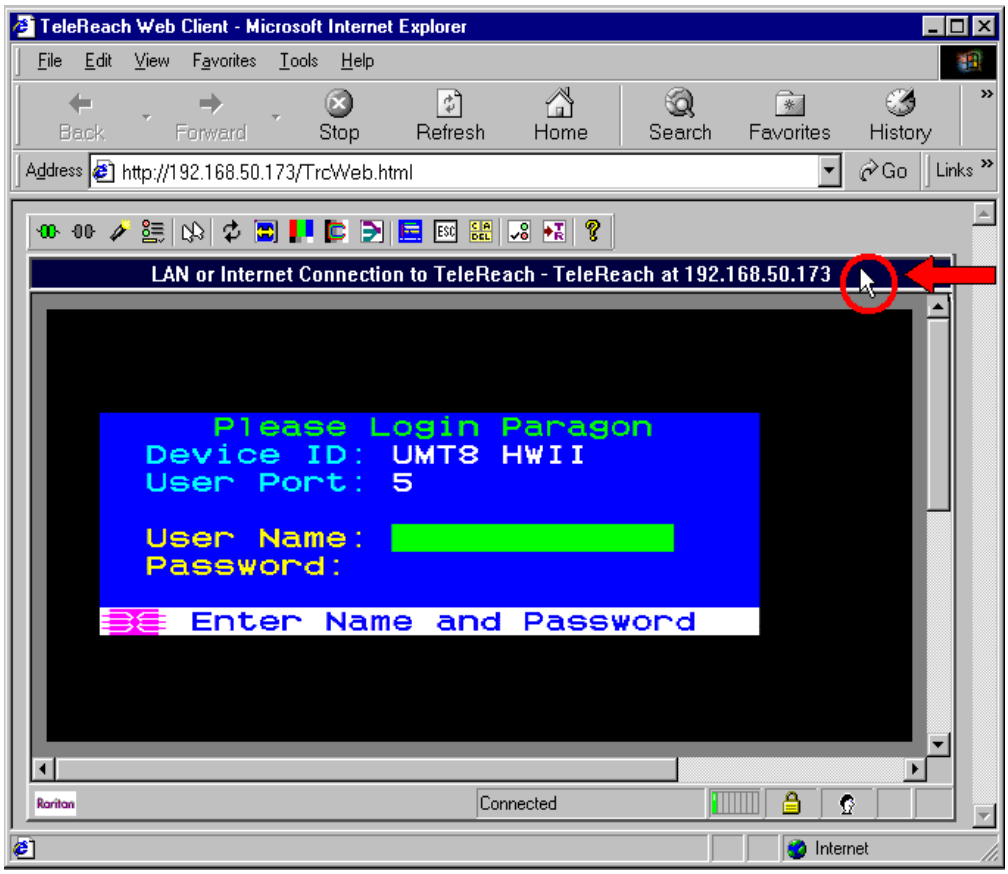


Figure 73. Click Window Title Bar and Proceed With Remote Session

NOTE: Click the title bar of the viewing window for complete keyboard access. If the viewing window is not the active window, the keyboard will not function. This includes function key access to the OSUI, such as F1 or F5, and general OSUI navigation with the <↑>, <↓>, or numeric keys.

Ending a Remote Web Browser Connection and Disconnecting

1. Click the **Disconnect** button on the TeleReach toolbar.
2. A **Disconnect** window will open. Click <OK>.
3. Close out the **Microsoft Internet Explorer** window.

APPENDIX D: Keyboard Macros

During a remote session, the Remote PC may interpret certain keystroke combinations intended for the Target Server. TeleReach's Keyboard Macro feature can be used to ensure that keystroke combinations intended for the Target Server are sent to, and interpreted only by, the Target Server, and not the Remote PC.

Building A Keyboard Macro

1. *TRC:* Click **Keyboard Macros** on the **TeleReach** window's **Keyboard** pull-down menu (Figure 74).

   Web Browser: Click on the Keyboard Macros button in the TeleReach toolbar (see Appendix A).

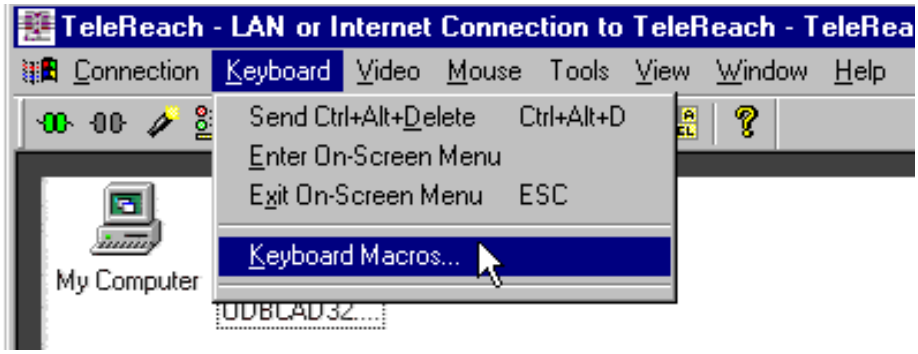


Figure 74. Accessing the Keyboard Macro Window

2. The **Keyboard Macros** window (Figure 75) opens.

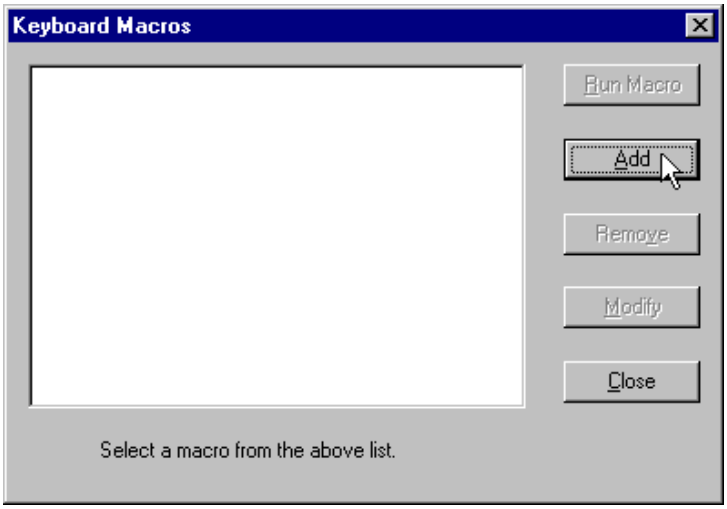


Figure 75. Keyboard Macros Window

3. Click the <Add> button.

4. The **Add Keyboard Macro** window (Figure 76) opens.

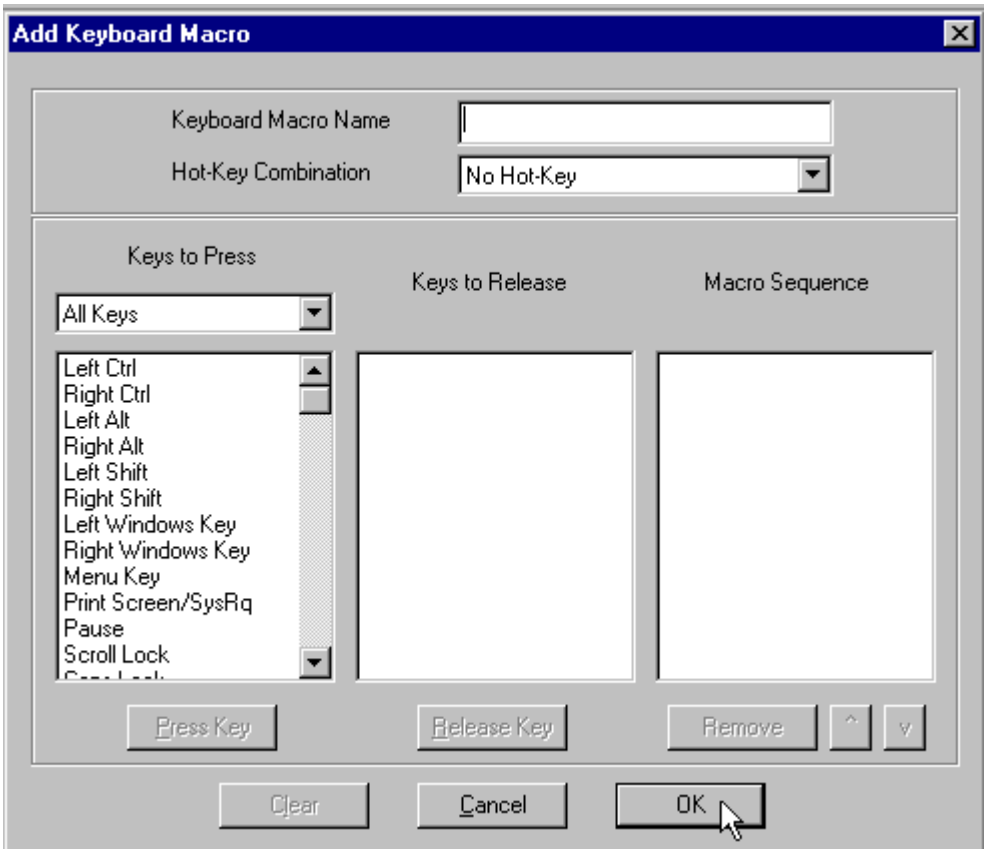
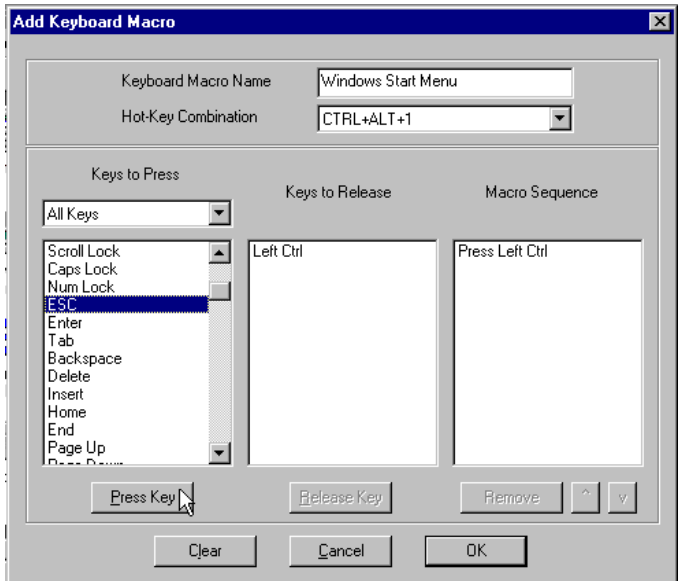


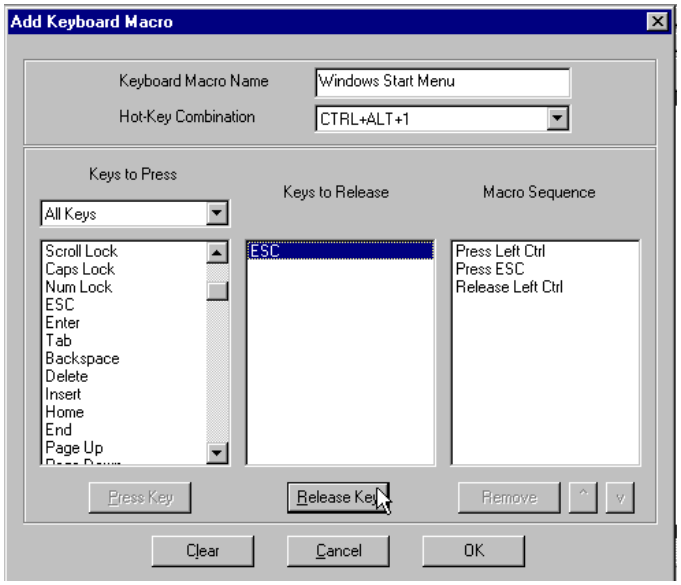
Figure 76. Add Keyboard Macro Window

5. Build the Keyboard Macro by accessing all the fields in the **Add Keyboard Macro** window. Click <OK> when finished.

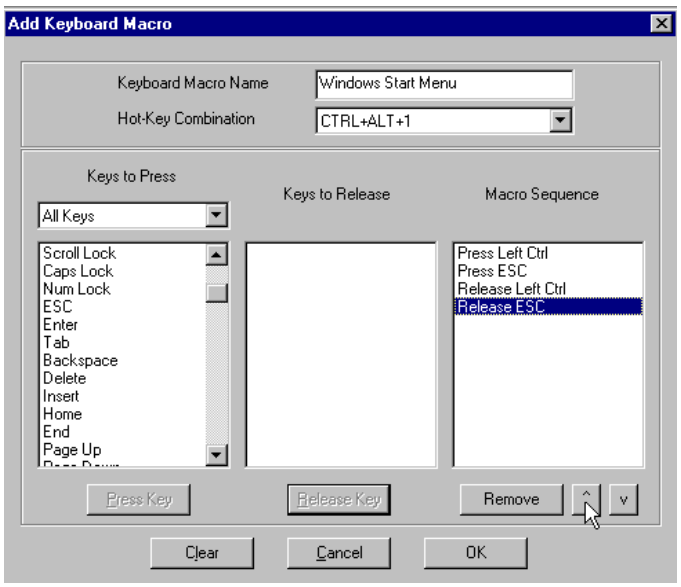
   - **Keyboard Macro Name:** Type a name for the macro sequence.
   - **Hot-Key Combination:** Assign a keystroke combination hotkey from the pull-down menu of choices. If **No Hot-Key** is selected then the keyboard macro built can only be run using the Remote PC's mouse. If a hot-key combination is selected, then the keyboard macro built can also be run by pressing the assigned hot-key combination —**Ctrl+Alt+#** — on the Remote PC's keyboard.
   - **Keys to Press:** Highlight each key to be included in the macro, clicking the <Press Key> button after each selection. Each key selected will appear in the **Keys to Release** and **Macro Sequence** columns as the <Press Key> button is clicked.
   - **Keys to Release:** Select each key in the **Keys to Release** column and clicking the <Release Key> button after each selection. Each key selected will move to the **Macro Sequence** column as a released key.
   - **Macro Sequence:** Sequence the keystrokes of the macro by selecting a key and its associated action (press or release), then use the < ^ > or < v > buttons to move the key/action to its desired location in the key stroke/release order. To remove a undesired keystroke from the list use the <Remove> button.

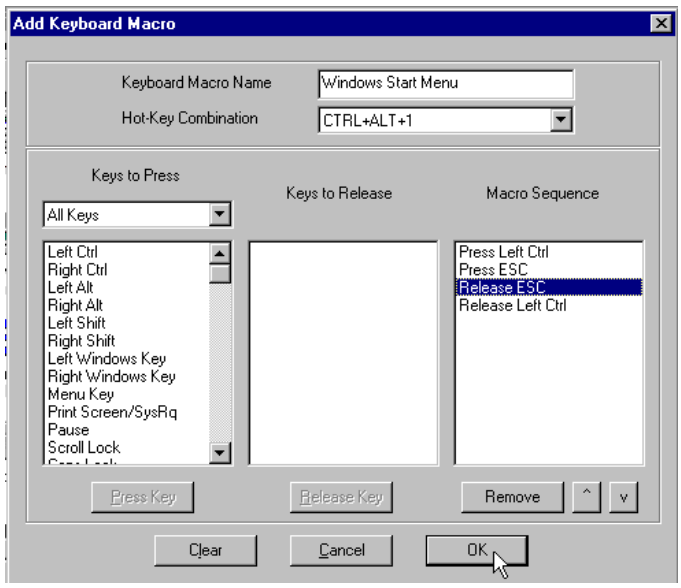
Example: Windows Start Menu Macro. Making a Macro to bring up the Windows Start Menu on the Target Server —Ctrl+Esc. (Figure 77)





1. **Keyboard Macro Name:** Windows Start Menu
2. **Hot-Key Combination:** CTRL+ALT+1
3. **Keys to Press:** Select Left Ctrl, click <Press Key>button. Select ESC, click <Press Key> button
4. **Keys to Release:** Select Left Ctrl, click <Release Key> button. Select ESC, click <Release Key> button





5. **Macro Sequence:** Highlight Release ESC, click < UP > button (^).
6. Click <OK> to finish

Figure 77. Example: Building A Keyboard Macro for the Windows Start Menu Sequence Ctrl+Esc.

Running A Keyboard Macro

Once a Macro is built it can be run via mouse activation or Hot-Key combination, if a hot-key is chosen.

Mouse Activation:
For the Start Windows Menu example, the Start Menu Macro can be activated at the Remote PC by clicking the macro name (Windows Start Menu), which appears on the TeleReach window's Keyboard pull-down menu (Figure 72) after the macro is created.

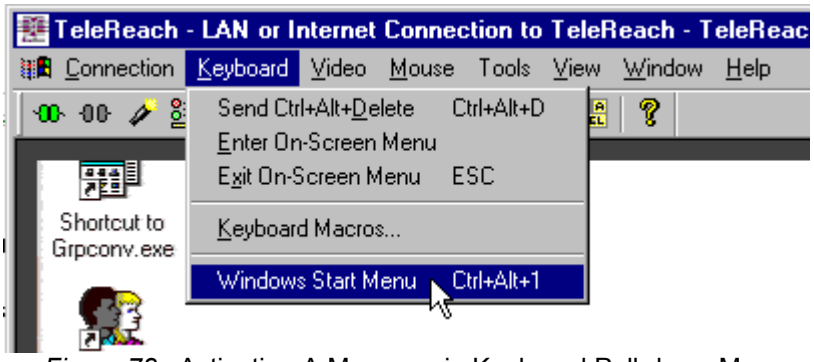


Figure 78. Activating A Macro – via Keyboard Pull-down Menu

Or by highlighting the macro name (Windows Start Menu), which appears in the Keyboard Macros window after the macro is created, and clicking the <Run Macro> (Figure 79).

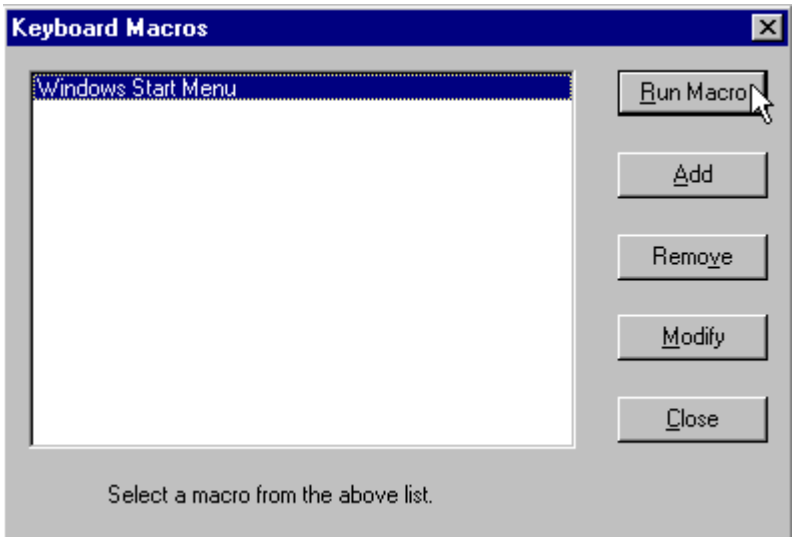


Figure 79. Activating A Macro – via Run Macro Button in Keyboard Macros Window

Hot-Key Activation:

For the Start Windows Menu example, the Start Menu Macro can be activated by simultaneously pressing the keys CTRL+ALT+1 on the Remote PC keyboard, since this was the Hot-Key Combination selected when the macro was created.

Other Keyboard Macros Window Buttons

Once a keyboard macro has been created, it can be removed or modified at a later date.

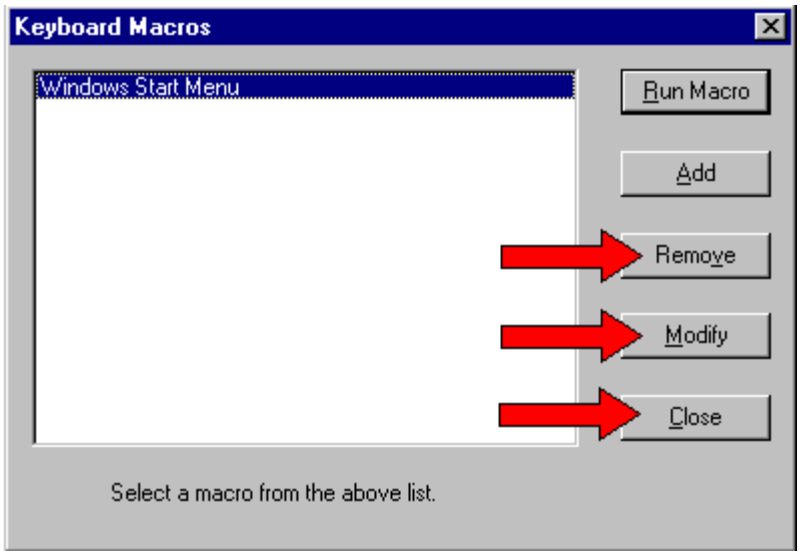


Figure 80. Other Keyboard Macros Window Buttons

Remove

Removes or deletes a selected keyboard macro.

Modify

Click the <Modify> button to modify a selected keyboard macro. This opens the **Modify Keyboard Macro** window, which is identical to the **Add Keyboard Macro** window (Figure 76). The **Modify Keyboard Macro** window enables modification of existing keyboard macros.

Cancel

Closes out the **Keyboard Macros** window (Figure 80).

APPENDIX E: The RADIUS Server

This Appendix discusses the RADIUS server and how it interacts with TeleReach to accommodate TeleReach as a RADIUS client. For information on designating the TeleReach unit itself as a RADIUS client see – the Radius Configuration screen (Figure 58) in [R] Radius Configuration under [C] Configure TeleReach.

Controlling TeleReach User Permissions via RADIUS FILTER-ID Attributes

TeleReach recognizes optional "FILTER-ID" RADIUS attributes returned by the RADIUS server. These returned FILTER-ID attributes communicate permissions for each user, which override default permissions set for all RADIUS users under "Default Radius Permissions" – [User permissions (Net, Modem, PC Share) – (Default), Admin permissions (Net, Modem, PC Share), and None, must use RADIUS attributes]. – see the Radius Configuration screen (Figure 58) and RADIUS Users Initial TeleReach Permissions (Figure 60).

The FILTER-ID attribute tells TeleReach what permissions to grant or deny each specific RADIUS user (or user group, since most RADIUS servers can be configured to return this optional attribute per user or for groups of users).

The FILTER-ID attribute contains an ASCII text string. The form of the string is the text – "TeleReach:*letter(s)*" – with the *letter(s)* being one or more of the case sensitive letters that add or subtract permissions, as follows:

A	Add administrator permissions.
a	Subtract administrator permissions.
K	Add keyboard and mouse control permissions.
k	Subtract keyboard and mouse control permissions.
M	Add modem access permissions.
m	Subtract modem access permissions.
N	Add network access (using TeleReach Remote Client software) permissions.
n	Subtract network access (using TeleReach Remote Client software) permissions.
W	Add web browser access permissions.
w	Subtract web browser access permissions.
P	Add PC Share permissions.
p	Subtract PC Share permissions.

Example # 1:
If the "Default RADIUS permissions" option is set to "User permissions (Net,Modem,PC Share)" and the RADIUS server returned a FILTER-ID attribute with the string "TeleReach:m", the modem access permission would be removed from the user. The user would be left with Network (TeleReach Remote Client Software), Web Browser, and PC Share permissions.

Example # 2:
If the "Default RADIUS permissions" option is set to "None, must use RADIUS attributes" and the RADIUS server returned a FILTER-ID attribute with the string "TeleReach:NAP", then the user would have network access, administrator, and PC Share permissions. The user would not have web browser permissions.

NOTE: When the “Default RADIUS permissions” option is set to “None, must use RADIUS attributes”, RADIUS user access to TeleReach will be denied unless the FILTER-ID is used to grant the user permissions.

RADIUS Attributes Generated by TeleReach

TeleReach sends the following RADIUS attributes to the RADIUS server with each access request:

Attribute	Data
USER-NAME	The user name entered at the login screen.
USER-PASSWORD	In PAP mode, the encrypted password entered at the login screen.
CHAP-PASSWORD	In CHAP mode, the CHAP protocol response computed from the password and the CHAP challenge data.
NAS-IP-ADDRESS	TeleReach's IP Address
NAS-IDENTIFIER	If the TeleReach unit's name, entered at the TeleReach Admin Console on the Network Configuration screen, is left to the default name "TeleReach," then the identifier will simply be "TeleReach". If another name is entered as an alternative to the default name "TeleReach," then the identifier will be "TeleReach.<name>" where <name> represents the alternative name entered on the Network Configuration screen.
NAS-PORT-TYPE	The value ASYNC (0) for modem connections and ETHERNET (15) for network connections.
NAS-PORT	Always 0.
STATE	If this request is in response to a ACCESS-CHALLENGE, the state data from the ACCESS-CHALLENGE packet will be returned.
PROXY-STATE	If this request is in response to a ACCESS-CHALLENGE, the proxy state data from the ACCESS-CHALLENGE packet will be returned.

TeleReach sends the following RADIUS attributes to the RADIUS server with each accounting request:

Attribute	Data
SESSION-TYPE	Either START (1) for log in or STOP (2) for log out.
SESSION-ID	A string containing a unique session name. The name is in the format of "<NAS-IDENIFIER>:<user IP address>:<number>" where <NAS-IDENTIFER> is the string from the NAS-IDENTIFIER attribute, <user IP address> is the IP address of the user's remote PC, and <number> is a unique sessions number. Example: "TeleReach:192.168.1.100:122"
USER-NAME	The user name entered at the login screen.
NAS-IP-ADDRESS	TeleReach's IP Address
NAS-IDENTIFIER	If the TeleReach unit's name, entered at the TeleReach Admin Console on the Network Configuration screen, is left to the default name "TeleReach," then the identifier will simply be "TeleReach". If another name is entered as an alternative to the default name "TeleReach," then the identifier will be "TeleReach.<name>" where <name> represents the alternative name entered on the Network Configuration screen.
NAS-PORT-TYPE	The value ASYNC (0) for modem connections and ETHERNET (15) for network connections.
NAS-PORT	Always 0.
FILTER-ID	Any FILTER-ID attributes returned by the RADIUS server during authentication will be sent in each accounting request.
CLASS	Any CLASS attributes returned by the RADIUS server during authentication will be sent in each accounting request.
ACCT-AUTHENTIC	How the user was authenticated. Either RADIUS (1) if the user was authenticated by the RADIUS server or LOCAL (2) if the user was authenticated by TeleReach's built-in user name database.
TERMINATE-CAUSE	If this is a STOP request, the reason the user was terminated. Either USER_REQUEST (1), LOST_SERVICE (3), SESSION_TIMEOUT (5), or ADMIN_RESET (6).

RADIUS Access Challenge

A RADIUS server can require additional information from the user, besides user name and password. The type of information will depend on the authentication method used by the RADIUS server. After TeleReach sends the initial ACCESS-REQUEST packet, the RADIUS server can return an ACCESS-CHALLENGE packet. The ACCESS-CHALLENGE packet will contain one or more reply messages for the user. TeleReach will display the reply messages and ask for the user's answer to the RADIUS server's challenge.

In the remote application, the RADIUS Challenge dialog box (Figure 81) will be displayed after the normal login dialog box. Enter your answer and press the OK button.

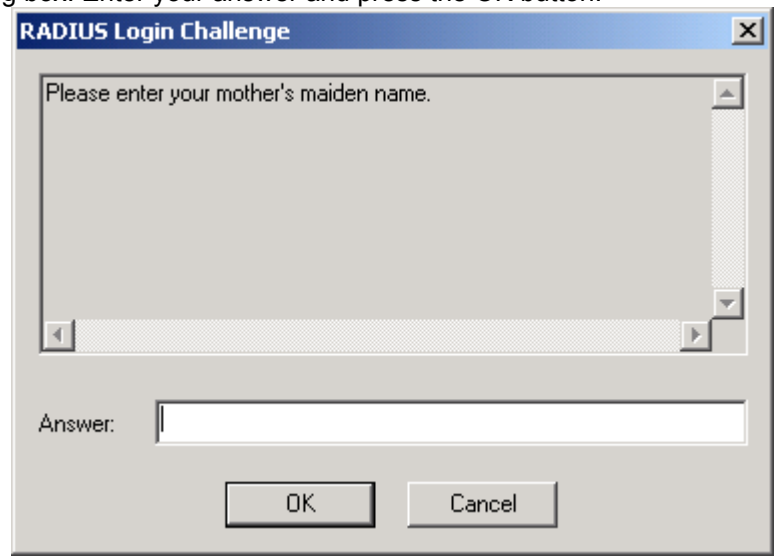


Figure 81. Example of a possible RADIUS Challenge Viewed From The Remote PC

RADIUS challenges can also be encountered at the TeleReach Admin Console (Figure 82).

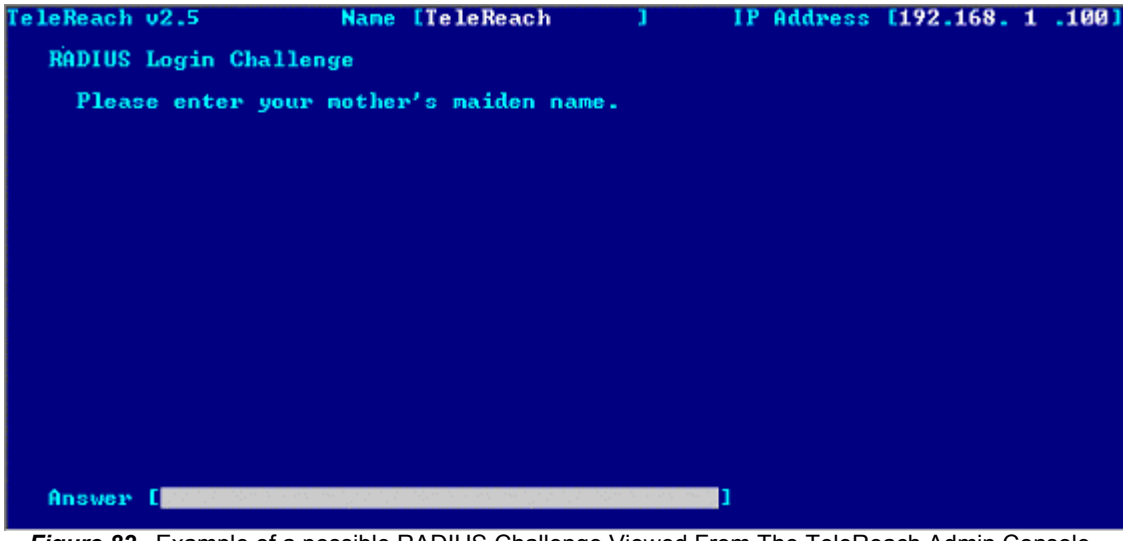

TeleReach v2.5 Name [TeleReach] IP Address [192.168. 1 .100]
RADIUS Login Challenge
Please enter your mother's maiden name.
Answer [ ]

Figure 82. Example of a possible RADIUS Challenge Viewed From The TeleReach Admin Console

APPENDIX F: Specifications

Item	Dimensions (WxDxH)	Weight	Power
TR361	**2U 19"Rack Mount Industrial PC Case: 19" (W) x 21.25" (D) x 3.5" (H) 482 mm (W) x 540 mm (D) x 89 mm (H)**	**28.2lbs. (12.79kg.)**	**+/-5V/+/-12V 115V, 60Hz AC current (230V, 50 Hz European)**
TR362	**2U 19"Rack Mount Industrial PC Case: 19" (W) x 21.25" (D) x 3.5" (H) 482 mm (W) x 540 mm (D) x 89 mm (H)**	**28.6lbs. (12.97kg.)**	**+/-5V/+/-12V 115V, 60Hz AC current (230V, 50 Hz European)**
TR363	**2U 19"Rack Mount Industrial PC Case: 19" (W) x 21.25" (D) x 3.5" (H) 482 mm (W) x 540 mm (D) x 89 mm (H)**	**29.0lbs. (13.15kg.)**	**+/-5V/+/-12V 115V, 60Hz AC current (230V, 50 Hz European)**
TR364	**2U 19"Rack Mount Industrial PC Case: 19" (W) x 21.25" (D) x 3.5" (H) 482 mm (W) x 540 mm (D) x 89 mm (H)**	**29.4lbs. (13.34kg.)**	**+/-5V/+/-12V 115V, 60Hz AC current (230V, 50 Hz European)**

Remote Connection

Network: 10BASE-T, 100BASE-TX Ethernet
Modem: 56K modem included
Protocols: TCP/IP and UDP

Remote PC Software

Operating system of Remote PC: Windows '98, 2000 or NT to support TRC software.

Target Server Hardware

PS/2 style keyboard, PS/2 style mouse and VGA style video output.
PS/2 style mouse and standard Windows mouse drivers. Does not support serial type mouse or non-standard mouse drivers.
PC type servers with HD15 video (separate sync).
Automatically supports video resolutions for Target PCs: 640 x 480, 800 x 600, 1024 x 768, 1152 x 864, 1280 x 1024.

Cable Specifications

Standard RJ11 based phone cord to connect modem to a phone line provided
Category 5e UTP cable to connect to network

KVM Switch Specifications

Supports KVM switches utilizing an On-Screen User Interface, including Raritan's Paragon, MasterConsole MX^4, and MasterConsole II models.

Electrical Specifications

TeleReach is powered by a standard PC +/-5V, +/-12V power supply. It runs off standard 120V, 60Hz AC line current (230V, 50 Hz European). The Frame Grabber card is powered by +5V/-12V supplied over the computer's PCI bus.

Output Specifications

Direct Analog User Console: PS/2 Keyboard, PS/2 Mouse, HD15 Video
TeleReach Admin Console: PS/2 Keyboard, HD15 Video.
Monitor must support resolutions that are at least one step higher than the highest Target Server resolution.

APPENDIX G: Sun Target Servers

TeleReach support for Sun Targets through a Raritan MasterConsole II or MasterConsole MX^4 Switch is currently undergoing final testing.

The proper Raritan Guardian Converter will be required:

13W3 Suns with composite sync output require APSSUN II Raritan guardian for use with TeleReach
HD15 Suns with composite sync output require 1396C Raritan converter to convert from HD15 to 13W3 and an APSSUN II Raritan guardian converter to support composite sync
HD15 Suns with separate sync output require an APKMSUN Raritan guardian for use with TeleReach

Sun Computers accessed through a Raritan Guardian Converter require a PS/2 style keyboard and mouse. TeleReach does not support Sun servers with a Raritan APSSUN guardian converter.

TeleReach support for Sun Targets through a Raritan Paragon Switch is currently under development.

Sun Target Servers must be one of the following supported resolutions:

- 1024x768@60Hz
- 1024x768@70Hz
- 1024x768@75Hz
- 1024x768@85Hz
- 1152x900@66Hz
- 1152x900@76Hz
- 1280x1024@60Hz

Unsupported TeleReach access to Sun Target Servers through other KVM switch brands will produce results that vary.

APPENDIX H: Linux Target Servers

Currently TeleReach supports Linux text-based and GUI Target Servers. TeleReach supported resolutions for Linux are identical to TeleReach supported PC resolutions (Figure 18).

For optimal TeleReach performance the following changes are recommended on each Linux GUI Target Server for the mouse acceleration and threshold settings, and the video settings:

Mouse Settings

Set each Linux Target's mouse acceleration =1, and threshold = 1. This can be done from the GUI (Figure 83) or with the command line "xset mouse a t" where "a" is the acceleration and "t" is the threshold.

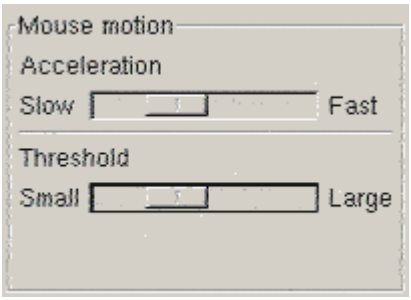


Figure 83. Graphical User Interface Linux Mouse Settings

Video Settings

For optimal TeleReach performance ensure that each Linux Target Server is using a resolution supported by TeleReach (Figure 18) or a standard VESA resolution and refresh rate. Each Linux Target should also be set so the blanking times are within +/- 40% of VESA standard values.

For each Linux Target Server:

- Go to the Xfree86 Configuration file XF86Config.
- Using a text editor, disable all non-TeleReach supported resolutions.
- Disable the virtual desktop feature, which is not supported by TeleReach
- Check blanking times (+/- 40% of VESA standard).
- Restart computer.

NOTE: <Ctrl+Alt+Plus> will change the Linux Target's current resolution, scrolling through all available resolutions that remain enabled in the XF86Config file.

APPENDIX I: Frequently Asked Questions

Question:	Answer:
What is TeleReach?	TeleReach is the easiest, fastest, most reliable way to remotely access and manage multiple servers connected to a Raritan KVM Switch —no matter where you are or where your servers are located.
How does TeleReach work?	TeleReach connects to the keyboard, video, and mouse ports of a server or KVM switch. Using Raritan's powerful frame-grabber and compression technology, it captures, digitizes, and compresses the video signal before transmitting to a remote PC.
What level of control does a TeleReach remote user have over attached Target Servers?	The remote user has direct access and total control of target servers for maintenance, administration, and troubleshooting, from running GUI applications to BIOS-level troubleshooting, and even rebooting.
Remote Access Software has been available for a long time. What makes TeleReach different?	With TeleReach, the TeleReach software runs only on the TeleReach unit itself, not on each individual Target Server. Traditional Remote Access Software solutions require software to be loaded and running on each Target Server, which must offer a supporting Operating System. This can create compatibility, performance, and reliability issues on mission critical Target Servers.
What remote access connection methods can TeleReach accommodate?	TeleReach provides network administrators with a choice of remote access via Internet, LAN/WAN, or dial-up modem. That means servers can be accessed both in and out of band, so remote access to mission-critical target servers is always available—even if the network is down.
What types of computers can TeleReach remotely control?	TeleReach works independently of a Target Server's hardware, operating system, or application software, accessing a Target Server's main input/output devices - keyboard, video, and mouse. Consequently, any hardware that supports standard PC keyboard interfaces, standard PC mouse interfaces, and standard PC video (VGA) can be used with TeleReach. Currently, TeleReach support is strongest for Windows-based Intel 86 servers, including HP, Dell, and Compaq. Sun support for certain Raritan KVM Switches is available with the proper Raritan Guardian converter products. ASCII devices can also be connected via Raritan's Guardian line of conversion products. TeleReach does not support Macintosh.
Is special software required for the Remote PC?	Each TeleReach ships with one copy of TeleReach Control software (TRC). This remote access software runs on any Remote PC with a Windows 98+ operating systems and communicates over Internet, LAN/WAN, or dial-up modem with TeleReach software on the TeleReach unit. With TRC installed, the Remote PC is like any other user console in your KVM configuration, but it can be located anywhere—around the corner , or around the world.
Which Raritan KVM Switches will work with TeleReach?	Currently Raritan supports the use of TeleReach with all Raritan KVM Switches that feature an On-Screen Display: Paragon, MasterConsole MX^4, and MasterConsole II.
Will other KVM switch brands work with TeleReach?	Nothing complements TeleReach better than a Raritan KVM Switch—especially Paragon. In theory, however, TeleReach can be used with any KVM switch that features an On-Screen User Interface menu for access to switching functions.

Question:	Answer:
Can I continue to access my KVM configuration locally?	Yes. TeleReach features a special Direct Analog User port for direct access to the KVM configuration. This pass through port provides an additional local access point, which is especially important for single user switches or for providing critical access to servers if the network is down.
Can TeleReach be used without a KVM switch?	Yes. TeleReach can be used to directly access individual Computers, connecting to the keyboard, video, mouse ports of an independent Computer. However, its convenience and value is leveraged through the use of a KVM switch.
Is TeleReach simple to install?	TeleReach is very easy to install. Just connect it to a user port on an existing KVM configuration, and assign an IP address and/or telephone number for modem access. Run the short installation wizard for the TeleReach Control Software (TRC) on your Remote PC, and you are ready for TeleReach remote access.
How Is TeleReach administration carried out?	Administrators access TeleReach through a connected TeleReach Admin Console. A simple keyboard driven interface of menus offers straightforward access to TeleReach setup and control. User profiles, security settings, configuration and diagnostics are just a few of the options available. The TeleReach Admin Console can be removed from the server room once TeleReach setup is complete. Or for constant, clutter-free access to TeleReach administrative menus from any location, TeleReach can be designated as a Target to its KVM configuration.
Are there security features to protect my Target Servers from an unauthorized remote connection?	Yes. TeleReach provides many layers of security. TeleReach can be configured to provide high-level connection authentication and video data transfer security during a remote session. User names, passwords, private-keys, and Secure Socket Layer (SSL) 128-bit encryption are all available. TeleReach can also function as a RADIUS client. In addition, all Raritan KVM Switches that feature an On-Screen User Interface (OSUI) come with a complete security scheme, requiring user name and password access to Servers as designated by the network administrator.
Can I customize TeleReach to enhance performance relative to my specific KVM configuration?	Yes. A variety of fine-tuning procedures are available. Automatic Color calibration, KVM On-Screen Display tuning, and Target Mouse Pointer adjustments all serve to enhance TeleReach performance.
Can I customize TeleReach to enhance performance with regard to different remote access methods and situations?	Yes. TeleReach offers a variety of performance enhancements to optimize a chosen connection method. Color Depth, Progressive Update, and Internet Flow Control are just a few of the adjustment options available to speed response time. Color Depth, for example, can be adjusted all the way down to black and white to decrease the data load during an emergency midnight modem connection to mission-critical servers over low-bandwidth.
Can I use TeleReach in a VPN?	Yes. TeleReach fits into most any network configuration utilizing standard TCP/IP. The network administrator simply adds TeleReach as a node on the network via the TeleReach Admin Console.

Question:	Answer:
What is the slowest connection TeleReach can handle?	TeleReach offers scalable performance based on bandwidth available, down to 20kbps.
Can I perform a Dial-up modem connection to TeleReach over a PBX line?	No. Modems require an analog telephone line.
Can I use TeleReach within my local network?	TeleReach can be used in any computer network that supports TCP/IP (and UDP).
Can TeleReach accommodate multiple remote connections at the same time?	TR364 and TR362 models enable 4 and 2 multiple user connections, respectively. In addition, up to 5 multiple users can remotely connect to TeleReach and concurrently share control on a first active keyboard/mouse input status on each available channel.

APPENDIX J: Troubleshooting

Problems And Suggested Solutions

Remote Connection Problems	Solution
I cannot connect to TeleReach via dial up modem.	Ensure that you have specified the modem device for your Remote PC in the Add Connection Window (Dial-up type connection) modem field. Although concurrent connections may be enabled (either globally or individually), the modem in TeleReach will only accommodate one remote connection at a time – ensure that someone else is not already connected via modem. Ensure that your user profile has modem access enabled and that TeleReach is configured to enable a modem interface on the Network Configuration Screen. Ensure that the communication port chosen by the network administrator on the **Network Configuration** screen (Figure 53) matches the port set in your connection profile (Figure 23b).
I cannot connect to TeleReach via LAN/WAN or Internet.	Re-check the IP settings for TeleReach from the TeleReach Admin Console or remote **Admin Console** window. Accessing the **Network Configuration** screen, ensure that the IP addresses set for "IP Address, Subnet Mask, and Default Gateway" are still set correctly, as per your Network Administrator's instructions. Ensure that your user profile has network access enabled and that TeleReach is configured to enable a network interface. Ensure that the communication port chosen by the network administrator on the **Network Configuration** screen (Figure 53) matches the port set in your connection profile (Figure 23a). Ensure that the network configuration is correct by sending a PING from the Remote PC to TeleReach.
I cannot connect to TeleReach via Web Browser.	Re-check the IP settings for TeleReach from the TeleReach Admin Console or remote **Admin Console** window. Accessing the **Network Configuration** screen, ensure that the IP addresses set for "IP Address, Subnet Mask, and Default Gateway" are still set correctly, as per your Network Administrator's instructions. Ensure that your user profile has Web Browser access enabled and that TeleReach is configured to enable Web Browser.
I cannot connect to TeleReach and seem to be stuck at the **Login** window.	Ensure that you are using a valid and correct user name and password. Ensure that you are typing user name and password in the exact upper and lower case combinations in which they were created. Drag the **Login** window to the side and view **Connection Status** window behind it. The **Connection Status** window will show details on your connection attempts, and may offer specifics on the problem.

Admin Console Problems	Solution
For convenience, I connected the TeleReach admin console to a KVM switch, and now the admin console does not respond to keyboard actions.	If you connected the TeleReach admin console to a Raritan KVM switch model that uses coaxial cables (e.g. MasterConsole II, MasterConsole MXU2, MasterConsole MX4), be sure to connect the admin console using a cable of 4 meters or less in length (p/n CCP06, CCP20, or CCP40). Otherwise, purchase and attach a Raritan Guardian device (p/n APKME) to the TeleReach admin console before connecting the admin console to the coaxial cable.

Direct Analog User Console Problems	Solution
The Direct Analog User Console(s) do not function.	Make sure the KVM switch is functioning properly. Make sure that TeleReach is turned on. TeleReach must be powered on for the Direct Analog User Console(s) to function. The cable(s) located inside TeleReach that connect the Direct Analog User Console port(s) may have disconnected – Contact Raritan Technical Support for assistance.
I cannot seem to gain steady keyboard/mouse control of the active Target Server from a Direct Analog User Console.	Keyboard/mouse control of a Target Server from a Direct Analog User Console is shared on a first active keyboard/mouse input basis with any remote users who may be currently connected. Ensure that no remote users are currently attempting to control the active Target Server.
I cannot view the Target Server that I am looking for from a Direct Analog User Console.	Ensure that you are looking at the Direct Analog User Console, connected to the correct User Port. Remember, Direct Analog User Consoles can be attached to User Ports 1 through 4. Each User Console will view the path of the matching KVM Port. For example, the User Console attached to User Port 1 will view the KVM path attached to KVM Port 1. Similarly, the User Console attached to User Port 2 will view the KVM path attached to KVM Port 2, and so on.

Keyboard Problems	Solution
TeleReach is not accepting keyboard commands from the Remote PC.	The **TeleReach** window of TRC must be the active window for proper keyboard control. Ensure the window in which you are typing is active. Try clearing the keyboard signals to ensure that the release or breakcode signal has been received – alternately press the <Ctrl>, <Shift> and <Tab> keys rapidly a few times on your keyboard. Ensure the remote user has keyboard and mouse privileges. Exit the TeleReach software and then restart it again.
I pressed the Caps Lock key on my Remote PC. The CAPS indicator on the TeleReach	This is normal. Use the indicators on the **Status Bar** (Figure 43) to determine CAPS key status for the Target Server. If a local user at the Direct Analog User Console's keyboard has changed a Lock key status

Status Bar appeared, but the Caps Lock indicator light is not lit on my Remote PC keyboard.	(Caps-Lock, Num-Lock, or Scroll-Lock) on the Target Server, then server status may not match the state of the Remote PC's keyboard.
The Keyboard is not functioning and the green LED on the back of TeleReach for at least one of the KVM ports is not blinking, but rather constantly lit.	Reset the keyboard chips within TeleReach by recycling power to it. Make sure you power down both TeleReach and all attached KVM switches at the same time. Otherwise the KVM chips in TeleReach will draw power from the KVM switches and fail to reset.
I am accessing TeleReach via the Web Browser and the keyboard does not function. I type, but nothing happens.	Click the window title bar under the TeleReach toolbar to activate the viewing window. If the viewing window is not the active window, the keyboard will not function.

KVM On-Screen User Interface (OSUI) Problems	**Solution**
Clicking on the **Enter On-Screen Menu button** does not bring up the connected KVM switch's On-Screen User Interface (OSUI). Nothing happens.	TeleReach may not be set to the correct KVM switch Hotkey activator. The default Hotkey setting is <Scroll Lock> or **Scroll Lock+Scroll Lock** in the TeleReach **Options** window. Make sure that the Hotkey set in the **Options** window is the same Hotkey that commands the OSUI of the base KVM switch attached to TeleReach. On the **TeleReach** window's menu, select Tools > Options. The **Options** window will appear. Select the appropriate Hotkey, which activates the connected KVM switch's OSUI. **Scroll Lock+Scroll Lock** = <Scroll Lock>, **Num Lock+Num Lock**= <Num Lock>, and **Caps Lock+Caps Lock** = <Caps Lock>. Click <OK> to continue.
A KVM switch is connected to my Remote PC. Entering <ScrollLock> <ScrollLock> (or any other designated KVM switch OSUI Hotkey) from the Remote PC's keyboard activates two OSUIs – one for the KVM switch attached to my Remote PC and one for the base KVM switch attached to TeleReach.	At the Remote PC user console, exit the OSUI for the Remote PC's KVM switch by hitting the <ESC> key once. Wait a few seconds and the OSUI for the Remote PC's KVM switch will disappear. To avoid this problem either reset the Remote PC's attached KVM switch to a Hotkey that differs from the Hotkey for the base KVM switch attached to TeleReach. Or use only TeleReach commands to activate the OSUI for the base KVM switch attached to TeleReach – press the **Enter On-Screen Menu** button.
Log out of KVM on disconnect is set to YES in the **Security Configuration** screen, but TeleReach is not logging out of the KVM upon remote user disconnection.	Make sure that the Hotkey set in the **Options** window is the same Hotkey that commands the OSUI of the base KVM switch attached to TeleReach.

I am accessing TeleReach via the Web Browser and I cannot control the KVM On-Screen User Interface (OSUI) menu. I bring up the OSUI with the Enter On-Screen Menu button on the TeleReach toolbar and then I cannot select a channel with the <↑> or <↓> or numeric keyboard keys. I try to move around the OSUI using the keyboard and nothing happens.	Click the window title bar under the TeleReach toolbar to activate the viewing window (see Figure 73). If the viewing window is not the active window, the keyboard will not function.
I am accessing TeleReach via the Web Browser and I cannot control the KVM On-Screen User Interface (OSUI) menus with the function keys. I try to bring up the OSUI's help menu with F1 or the Administration Menu with F5, and I get Internet Explorer's Help Menu or I get disconnected, respectively.	Click the window title bar under the TeleReach toolbar to activate the viewing window (see Figure 73). If the viewing window is not the active window, the function keys will translate as browser entries, not as keyboard communications to the OSUI.

Mouse Problems	**Solutions**
Target Server Mouse Pointer tracks too slowly after **TeleReach Mouse Pointer**. Or Immediately after switching to a new Target Server channel the mouse stops and/or is out of sync.	When working from a Remote PC, a slight delay between the larger **TeleReach Mouse Pointer** and the smaller **Target Server Mouse Pointer** is normal due to uncontrollable lags in the speed of the remote connection – Internet, direct dial modem, or network. With each new video image viewed, TeleReach automatically re-syncs and aligns the mouse pointers. Wait a few seconds after switching to each new video image for automatic re-calibration to take place and the two mouse pointers will line up with each other. If you do not wish to wait for this auto calibration, or you find the two mouse pointers out of sync at any time; click the **Synchronize Mouse button**, or simultaneously press the keys <Ctrl-Alt-S>. This will manually re-align the two pointers. Adjust the motion of the **Target Server Mouse Pointer**. For Windows 2000 based Target Servers, set the mouse motion speed on each Target Server to the middle speed setting between slow and fast and the mouse motion acceleration speed on each Target Server to <off> or <none>. For Windows '95, '98, and NT based Target Servers, set the mouse motion speed on each Target Server to the slowest setting. Color Settings are not optimally calibrated. Run the Automatic Color Calibration Routine in **7. Fine-Tune TeleReach Control Software**.

The larger **TeleReach Mouse Pointer** does not track or is not in sync (not aligned) with the smaller **Target Server Mouse Pointer.**	Click **Synchronize Mouse button**, or press <Ctrl-Alt-S>. Ensure each Target Server uses a standard Windows mouse driver. For Windows 2000 based Target Servers, set the mouse motion speed on each Target Server to the middle speed setting between Slow and Fast and the mouse motion acceleration speed on each Target Server to <None>. For Windows '95, '98, and NT based Target Servers, set mouse motion speed on each Target Server to slowest setting possible. Click **Auto-sense Video button** or simultaneously press <Ctrl-Alt-A>.
TeleReach is not accepting my mouse.	TeleReach will not support a serial type mouse or non-standard mouse drivers. It does support a PS/2 style mouse and standard Windows mouse drivers. Other mouse drivers may function with TeleReach, but will require extensive changes to the mouse settings until a functioning mix of motion settings is found. If you must use a mouse driver on a Target Server that is not currently supported by TeleReach, try setting the mouse acceleration to <none> and the mouse speed to <slow>.
TeleReach Mouse Pointer and the **Target Server Mouse Pointer** do not sync up in certain Windows NT Administration screens, like the NT log on screen.	Windows NT Administration or Log On screens may revert to default mouse pointer motion/acceleration speeds. As a result, mouse sync may not be optimal at these screens. If you are comfortable adjusting the registry on the Windows NT Target PC, you can obtain better TeleReach mouse sync at NT Administration screens by entering the Target PC's registry editor and changing the following settings: default user mouse motion speed = 0; mouse threshold 1 = 0; mouse threshold 2 = 0.

Target Server Problems	**Solution**
The KVM configuration works fine alone, but, there seems to be a problem with the Sun Targets when TeleReach is utilized.	See **Appendix G: Sun Target Servers**
When I reboot a Target Server through TeleReach, from a Remote PC, I cannot access the Target Server's BIOS. It seems TeleReach is not accepting the BIOS entry command keystroke.	To access a Target Server's BIOS first temporarily de-select the **Sense video mode changes automatically** checkbox in the **Video Settings** window, accessed with the **Video Settings** button on the TeleReach toolbar. Video auto-sensing slows remote viewing of the reboot process and makes it difficult to send BIOS access keystrokes to the Target Server from a Remote PC, because auto-sensing tells TeleReach to work constantly to keep up with the Target Server's feverishly changing video screens during reboot. De-selecting the auto-sense checkbox frees TeleReach to accept and convey BIOS access keystrokes. It also aides in the quick interpretation of rapidly changing video screens. Be sure to re-select the checkbox when finished with BIOS access.

TeleReach Problems	Solution
There is no control and no frame grabbing activity occurring. TeleReach seems to have "locked-up.	An internal serial data cable, which connects the frame grabber card to the motherboard of TeleReach may have become disconnected. Contact Raritan Technical Support for assistance.
I cannot power down TeleReach.	The main power switch for TeleReach is on the back of the unit. To turn off TeleReach hold the power key down for a few seconds. To turn TeleReach back on, press the power button again.
After loss of power TeleReach does not automatically power-ON again when power is regained.	Enter the BIOS of TeleReach and ensure that the "Power Lost Resume State" is set to "Last State." TeleReach will then turn ON when power is applied, only if it was already ON when power was lost.

Video Problems	Solution
After switching to a different Target Server channel the video is not clear. Sometimes there is a black edge at the boundary of the Target Server's screen.	Click the **Auto-sense Video button** or simultaneously press the keys <Ctrl-Alt-A>. TeleReach will adjust the video settings. If the video does not become clear, additional manual video setting adjustments may be necessary. Contact Raritan Technical Support to discuss changes to the **Video Settings** window (Figure 42). Ensure all Target Servers have standard blanking times. Horizontal and vertical blanking times should closely approximate VESA standard values.
When viewing a Target Server remotely, the video image is filled with moving block of incorrect color that seem to track next to the movement of the mouse pointer.	The Color Settings on the Video Settings tab in the **Video** window (Figure 42) are not set correctly. Attempt manual adjustment until the color blocking ceases or run the Automatic Color Calibration Routine – see **7. Fine-Tune TeleReach Control Software.**
The screen is filled with small visual errors, or grains of missing color, which need to be cleaned up.	Click the **Refresh Screen button** on the TeleReach toolbar or simultaneously press the keys <Ctrl-Alt-R>. In order to reduce the data transmission load, small bits of non-critical video data may be held back from primary transmission. These bits are normally recovered and sent during less busy periods of data transmission. Sometimes, however, TeleReach looses track, or falls behind in sending video data bits.

The video seems to be stuck in Auto Sense mode and the auto sensing message in the middle of the screen keeps counting higher and higher.	Pressing the **Auto-sense Video button** while auto sensing is occurring will stop the auto sense process. Check your Target Server resolution to ensure TeleReach supports it.

Web Browser Problems	**Solution**
I cannot connect to TeleReach via Web Browser.	Re-check the IP settings for TeleReach from the TeleReach Admin Console or remote **Admin Console** window. Accessing the **Network Configuration** screen, ensure that the IP addresses set for "IP Address, Subnet Mask, and Default Gateway" are still set correctly, as per your Network Administrator's instructions. Ensure that your user profile has Web Browser access enabled and that TeleReach is configured to enable Web Browser.
I am accessing TeleReach via the Web Browser and the keyboard does not function. I type, but nothing happens.	Click the window title bar under the TeleReach toolbar to activate the viewing window (see Figure 73). If the viewing window is not the active window, the keyboard will not function.
I am accessing TeleReach via the Web Browser and I cannot control the KVM On-Screen User Interface (OSUI) menu. I bring up the OSUI with the Enter On-Screen Menu button on the TeleReach toolbar and then I cannot select a channel with the <↑> or <↓> or numeric keyboard keys. I try to move around the OSUI using the keyboard and nothing happens.	Click the window title bar under the TeleReach toolbar to activate the viewing window (see Figure 73). If the viewing window is not the active window, the keyboard will not function.
I am accessing TeleReach via the Web Browser and I cannot control the KVM On-Screen User Interface (OSUI) menus with the function keys. I try to bring up the OSUI's help menu with F1 or the Administration Menu with F5, and I get Internet Explorer's Help Menu or I get disconnected, respectively.	Click the window title bar under the TeleReach toolbar to activate the viewing window (see Figure 73). If the viewing window is not the active window, the function keys will translate as browser entries, not as keyboard communications to the OSUI.

I am accessing TeleReach remotely via the Web Browser and I cannot seem to open up a second remote Web Browser connection to TeleReach. I am connected and when I try to open a second connection I get some sort of message that I must disconnect before making a new connection.	Each Microsoft Internet Explorer Web Browser window can support only one remote connection to TeleReach. If you wish only one connection at a time, then you can end the current remote session by disconnecting within the open Microsoft Internet Explorer window, and then reconnect to an alternate path. If you would like multiple remote connections via Web Browser, then you must open up a new Microsoft Internet Explorer window for each active TeleReach remote connection to be performed.

Event Log File and On Screen Error Codes

TeleReach will display or log an error code in the **TeleReach Event Log Screen** (Figure 64) whenever a problem occurs. The error codes are 8 digit hexadecimal numbers. The code contains two parts, the first four digits contain the type of error, memory, network,etc., and the second four digits contain a location code. This location code tells exactly where in the TeleReach program code the error has occurred. These last four digits are the most useful in determining what has gone wrong.

Below is a list of error location codes and what they mean.

Error Code (last 4 digits)	**Meaning**	**Recommendation**
0001	Memory allocation error	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.
0002	Memory allocation error	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.
0003	Memory allocation error	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.
0004	Could not read the configuration file on startup. The file may be corrupt, the file system may be damaged, or the config file might be from an older version of TeleReach.	Reenter the configuration information and reboot. If the problem continues, restore the software and file system from the Recovery CD-ROM.
0005	The config file was missing. This may be the first time you have started TeleReach or the file system has become corrupt.	Reenter the configuration information and reboot. If the problem continues, restore the software and file system from the Recovery CD-ROM.
0006	The config file could not be saved. The file system may be corrupt or the hard drive may not be responding.	Retry, but if the problem persists, restore the software and file system from the Recovery CD-ROM.
0007	Memory allocation error.	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.
0008	Memory allocation error.	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the recovery CD-ROM.
0009	Could not find the frame grabber card.	Power off the system and make sure the frame grabber card is inserted firmly. If the problem persists, there may be a problem with your TeleReach hardware.
000A	Frame grabber card is not responding correctly.	Power off the system and make sure the frame grabber card is inserted firmly. If the problem persists, there may be a problem with your TeleReach hardware.
000B	Memory allocation error.	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.
000C	Memory allocation error.	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.
000D	Memory allocation error.	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.
000E	Memory allocation error.	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.
000F	Memory allocation error.	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.

Error Code (last 4 digits)	**Meaning**	**Recommendation**
0011	The Ethernet controller could not be found.	There is a problem with the TeleReach hardware.
0012	The modem could not be found.	Power off the system and make sure the frame grabber card is inserted firmly. If the problem persists, there may be a problem with your TeleReach hardware.
0013	Memory allocation error.	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.
0014	There is a problem with the IP address.	Check the IP address configuration and reboot.
0015	The DHCP server did not respond. TeleReach could not acquire an IP address.	Make sure your DHCP server is operating correctly and then reboot TeleReach.
0016	There is a problem with one of the TeleReach startup files.	Restore the software and file system from the Recovery CD-ROM.
0017	There is a problem with one of the TeleReach startup files.	Restore the software and file system from the Recovery CD-ROM.
0018	There is a problem with one of the TeleReach startup files.	Restore the software and file system from the Recovery CD-ROM.
0019	There is a problem with one of the TeleReach startup files.	Restore the software and file system from the Recovery CD-ROM.
001A	Error occurred while initializing the UDP socket.	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.
001B	Error occurred while initializing the TCP write socket.	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.
001C	Error occurred while initializing the TCP read socket.	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.
001D	Resource allocation error.	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.
001E	Resource allocation error.	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.
001F	Could not listen to the TCP write socket.	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.
0020	Could not listen to the TCP read socket.	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.
0021	TCP listen process failed.	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.
0022	UDP listen process failed.	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.
0023	SSL write failed.	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.
0024	SSL read failed.	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.
0025	Memory allocation error.	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.
0026	Resource allocation error.	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.
0027	Resource allocation error.	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.
0028	Resource allocation error.	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.

Error Code (last 4 digits)	**Meaning**	**Recommendation**
0029	Resource allocation error.	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.
002A	Resource allocation error.	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.
002B	Resource allocation error.	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.
002C	Resource allocation error.	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.
002D	Resource allocation error.	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.
002F	Resource allocation error.	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.
0030-0039	Resource allocation error.	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.
003A	Resource allocation error.	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.
003B	Resource allocation error.	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.
003C	Resource allocation error.	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.
003D	Resource allocation error.	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.
003E	Resource allocation error.	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.
003F	Resource allocation error.	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.
0040	Resource allocation error.	Reboot TeleReach. Make sure the BIOS memory test recognizes at least 64meg of RAM. If the problem persists, restore the software and file system from the Recovery CD-ROM.

Glossary

Desktop	View displayed on monitor showing the contents of the active and open program window.
Dial-up Modem	Computer hardware device that converts digital signals to analog signals for analog telephone data transmission.
IP Address	Internet Protocol Address. A series of numbers that specifically identifies a device that is connected to the Internet or a network.
LAN	Local Area Network. A group of computers in the same general location that share communication through local connections.
Login	Security that requires the entering of a user name and password to gain remote access to TeleReach.
On-Screen User Interface (OSUI)	The selection and operation menu for a Raritan KVM Switch.
RADIUS	Remote Authentication Dial-in User Service. Enables remote access servers to communicate with a central server authenticate remote users and authorize their access.
Remote PC	A remote Windows-based computer that is used to view and control TeleReach and its connected Target Servers through a Raritan KVM switch, using TeleReach Control (TRC) software.
Target Server(s)	Computer(s) in server room. These are the computers or servers that are accessed remotely with TeleReach through a KVM switch.
Target Server Mouse Pointer	Mouse pointer of Target Server. This mouse pointer follows the larger TeleReach Mouse Pointer.
TeleReach Mouse Pointer	Larger mouse pointer created by TeleReach to give direction to the smaller Target Server Mouse Pointer.
TeleReach Toolbar	Contains icons and buttons providing quick access to commonly used functions of TeleReach.
TeleReach Window	Window created by double clicking on the TRC icon to open the TRC software. Within this window is the Target Server's desktop or a view of any image that the connected Raritan KVM switch is set to receive at this KVM user port.
TeleReach Control (TRC) software	TRC provides for a remote connection to TeleReach. Once installed on a Remote PC with a Windows '98, 2000, or NT operating system; TRC enables remote connection and communication to Target Servers via direct access to TeleReach.
User Console	Keyboard, Monitor, and Mouse.
WAN	Wide Area Network. A group of computers that share a communication or network connection across a broad geographic area.

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